

SEQUENCE LISTING

<110> DeVries, Peter J.
 Green, Larry L.
 Ostrow, David H.
 Reilly, Edward B.
 Wieler, James

<120> Erythropoietin Receptor Binding
 Antibodies

<130> 6989.US.02

<150> 10/269,711

<151> 2002-10-14

<160> 115

<170> FastSEQ for Windows Version 4.0

<210> 1

<211> 30

<212> PRT

<213> Homo sapiens

<400> 1

Pro	Gly	Asn	Tyr	Ser	Phe	Ser	Tyr	Gln	Leu	Glu	Asp	Glu	Pro	Trp	Lys
1				5				10						15	
Leu	Cys	Arg	Leu	His	Gln	Ala	Pro	Thr	Ala	Arg	Gly	Ala	Val		
			20					25					30		

<210> 2

<211> 349

<212> DNA

<213> Homo sapiens

<400> 2

caggtgcagc	tgcaggagtc	gggcccagga	ctggtgaagc	cttcggagac	cctgtccctc	60
acctgcactg	tctctggtgc	ctccatcagt	agttactact	ggagctggat	ccggcagccc	120
ccagggaagg	gactggagtg	gattgggtat	atctattaca	gtgggagcac	caactacaac	180
ccctccctca	agagtcgagt	caccatatca	gtagacacgt	ccaagaacca	gttctccctg	240
aagctgaggt	ctgtgaccgc	tgcggacacg	gccgtgtatt	actgtgagag	agagcgactg	300
gggatcgggg	actactgggg	ccaaggaacc	ctggtcaccg	tctcctcag		349

<210> 3

<211> 116

<212> PRT

<213> Homo sapiens

<400> 3

Gln	Val	Gln	Leu	Gln	Glu	Ser	Gly	Pro	Gly	Leu	Val	Lys	Pro	Ser	Glu
1				5				10						15	
Thr	Leu	Ser	Leu	Thr	Cys	Thr	Val	Ser	Gly	Ala	Ser	Ile	Ser	Ser	Tyr
			20					25					30		
Tyr	Trp	Ser	Trp	Ile	Arg	Gln	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Ile	
		35					40				45				
Gly	Tyr	Ile	Tyr	Tyr	Ser	Gly	Ser	Thr	Asn	Tyr	Asn	Pro	Ser	Leu	Lys

```

      50              55              60
Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe Ser Leu
65              70              75              80
Lys Leu Arg Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
      85              90              95
Arg Glu Arg Leu Gly Ile Gly Asp Tyr Trp Gly Gln Gly Thr Leu Val
      100              105              110
Thr Val Ser Ser
      115

```

```

<210> 4
<211> 322
<212> DNA
<213> Homo sapiens

```

```

<400> 4
gacatccagc tgaccaatc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60
atcacttgcc gggcaagtca gggcattaga aatgatttag gctggatatca gcagaaacca 120
gggaaagccc ctaagcgccct gatctatgct gcatccagtt tgcaaagtgg ggtcccatca 180
aggttcagcg gcagtggatc tgggacagaa ttcactctca caatcagcag cctgcagcct 240
gaagattttg caacttatta ctgtctacag cataatactt accctccgac gttcggccaa 300
gggaccaagg tggaaatcaa ac                                     322

```

```

<210> 5
<211> 107
<212> PRT
<213> Homo sapiens

```

```

<400> 5
Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
1              5              10              15
Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Ar g Asn Asp
      20              25              30
Leu Gly Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Arg Leu Ile
      35              40              45
Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
      50              55              60
Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65              70              75              80
Glu Asp Phe Ala Thr Tyr Tyr Cys Leu Gln His Asn Th r Tyr Pro Pro
      85              90              95
Thr Phe Gly Gln Gly Thr Lys Val Glu Ile Lys
      100              105

```

```

<210> 6
<211> 370
<212> DNA
<213> Homo sapiens

```

```

<400> 6
cagggtgcagc tgggtggagtc tggggggag gc gtgggtccagc ctggggaggtc cctgagactc 60
tcctgtgtag cctctggatt caccttcagt agctatggca tgcactgggt ccgccaggct 120
ccaggcaagg ggctggagtg ggtggcagtt atatcatatg atggaagtaa taaatactat 180
gcagactccg tgaagggccg attcaccatc tccagagaca attccaagaa cacgctgtat 240
ctgcaaataga acagcctgag agttgaggac acggctgtgt attactgtgc gagagatcac 300
gggtgggaggc acgtctacga ctacgggatg gacgtctggg gccaaaggac cacggtcacc 360
gtctcctcag                                     370

```

<210> 7
 <211> 123
 <212> PRT
 <213> Homo sapiens

<400> 7
 Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Val Ala Ser Gly Phe Thr Phe Ser Ser Tyr
 20 25 30
 Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
 35 40 45
 Ala Val Ile Ser Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val
 50 55 60
 Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
 65 70 75 80
 Leu Gln Met Asn Ser Leu Arg Val Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95
 Ala Arg Asp His Gly Gly Arg Tyr Val Tyr Asp Tyr Gly Met Asp Val
 100 105 110
 Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 115 120

<210> 8
 <211> 322
 <212> DNA
 <213> Homo sapiens

<400> 8
 gacatccaga tgacccaatc tccatcttcc gtgtctgcat ctataggaga cagagtctcc 60
 atcacttgtc gggcgagtca ggggtattagc agctgggttag cctgggtatca gcagaaacca 120
 gggaaagccc ctacgctcct tatctatgct gcatccactt tgcaacgtgg ggtcccatca 180
 aggttcagcg gcagtggtac tgggacagat ttcactctca ccatcagcag cctgcagcct 240
 gaagattttg caacttactt ttgtcaacag gctaacagtt tcccattcac ttctggccct 300
 gggaccaaaag tggatatcaa ac 322

<210> 9
 <211> 107
 <212> PRT
 <213> Homo sapiens

<400> 9
 Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Val Ser Ala Ser Ile Gly
 1 5 10 15
 Asp Arg Val Ser Ile Thr Cys Arg Ala Ser Gln Gly Ile Ser Ser Trp
 20 25 30
 Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Thr Leu Leu Ile
 35 40 45
 Tyr Ala Ala Ser Thr Leu Gln Arg Gly Val Pro Ser Arg Phe Ser Gly
 50 55 60
 Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
 65 70 75 80
 Glu Asp Phe Ala Thr Tyr Phe Cys Gln Gln Ala Asn Ser Phe Pro Phe
 85 90 95
 Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
 100 105

<210> 10
 <211> 370
 <212> DNA
 <213> Homo sapiens

<400> 10
 caggtgcagc tgggtggagtc tggggggaggc gtgggtccagc ctggggaggtc cctgagactc 60
 tctctgtgcag cctctggatt caccttcagt agcta tggca tgcactgggt ccgccaggct 120
 ccaggcaagg ggctggagtg ggtggcagtt atatcatatg atggaagtaa taaatactat 180
 gcagactccg tgaagggccg attcaccatc tccagagaca attccaagaa cacgctgtat 240
 ctgcaaatac acagcctgag agttgaggac acggctgtgt attactgtgc gagagatcac 300
 ggtggggaggt acgtctacga ctacgggtatg gacgtctggg gccaaaggac cacgggtcacc 360
 gtctcctcag 370

<210> 11
 <211> 123
 <212> PRT
 <213> Homo sapiens

<400> 11
 Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
 20 25 30
 Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
 35 40 45
 Ala Val Ile Ser Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val
 50 55 60
 Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
 65 70 75 80
 Leu Gln Met Asn Ser Leu Arg Val Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95
 Ala Arg Asp His Gly Gly Arg Tyr Val Tyr Asp Tyr Gly Met Asp Val
 100 105 110
 Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
 115 120

<210> 12
 <211> 322
 <212> DNA
 <213> Homo sapiens

<400> 12
 gacatccaga tgaccaaatc tccatcttcc gtgtctgcat ctgtaggaga cagagtctcc 60
 atcacttgtc gggcgagtca ggggtattagc agctgggttag tctgggtatca gcagaaacca 120
 gggaaagccc ctgcgctcct aatctatgct gcatccagtt tgcagcgtgg ggtcccatca 180
 aggttcagcg gcagtggatc tgggacagac ttcactctca ccatcagcag cctgcagcct 240
 gaagattttg caacttactt ttgtcaacag gctaacagtt tccatttcac tttcggccct 300
 gggaccaaaag tggatatcaa ac 322

<210> 13
 <211> 107
 <212> PRT
 <213> Homo sapiens

<400> 13
 Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Val Ser Ala Ser Val Gly

1				5				10				15			
Asp	Arg	Val	Ser	Ile	Thr	Cys	Arg	Ala	Ser	Gln	Gly	Ile	Ser	Ser	Trp
			20					25					30		
Leu	Val	Trp	Tyr	Gln	Gln	Lys	Pro	Gly	Lys	Ala	Pro	Ala	Leu	Leu	Ile
		35					40					45			
Tyr	Ala	Ala	Ser	Ser	Leu	Gln	Arg	Gly	Val	Pro	Ser	Arg	Phe	Ser	Gly
		50				55					60				
Ser	Gly	Ser	Gly	Thr	Asp	Phe	Thr	Leu	Thr	Ile	Ser	Ser	Leu	Gln	Pro
65					70					75				80	
Glu	Asp	Phe	Ala	Thr	Tyr	Phe	Cys	Gln	Gln	Ala	Asn	Ser	Phe	Pro	Phe
				85					90					95	
Thr	Phe	Gly	Pro	Gly	Thr	Lys	Val	Asp	Ile	Lys					
			100					105							

<210> 14
 <211> 370
 <212> DNA
 <213> Homo sapiens

<400> 14
 caggtgcagc tgggtggagtc tggggggaggc gtggtccagc ctgggaggtc cctgagactc 60
 tcctgtgcag cctctggatt caccttcagt agctatggca tgcactgggt ccgccaggct 120
 ccaggcaagg ggctggagtg ggtggtagtt atatca tatg atggaagtaa taaatactat 180
 gcagactccg tgaagggccg attcaccatc tccagagaca attccaagaa cacgctgtat 240
 ctgcaaataa acagcctgag agttgaggac acggctgtgt attactgtgc gagagatcac 300
 ggtgggaggt acgtctacga ctacggtatg gacgtctggg gccaaaggac cacggtcacc 360
 gtctcctcag 370

<210> 15
 <211> 123
 <212> PRT
 <213> Homo sapiens

Gln	Val	Gln	Leu	Val	Glu	Ser	Gly	Gly	Gly	Val	Val	Gln	Pro	Gly	Arg
1				5					10					15	
Ser	Leu	Arg	Leu	Ser	Cys	Ala	Ala	Ser	Gly	Phe	Thr	Phe	Ser	Ser	Tyr
			20					25					30		
Gly	Met	His	Trp	Val	Arg	Gln	Ala	Pro	Gly	Lys	Gly	Leu	Glu	Trp	Val
		35					40					45			
Val	Val	Ile	Ser	Tyr	Asp	Gly	Ser	Asn	Lys	Tyr	Tyr	Ala	Asp	Ser	Val
		50				55					60				
Lys	Gly	Arg	Phe	Thr	Ile	Ser	Arg	Asp	Asn	Ser	Lys	Asn	Thr	Leu	Tyr
65					70					75				80	
Leu	Gln	Met	Asn	Ser	Leu	Arg	Val	Glu	Asp	Thr	Ala	Val	Tyr	Tyr	Cys
			85						90				95		
Ala	Arg	Asp	His	Gly	Gly	Arg	Tyr	Val	Tyr	Asp	Tyr	Gly	Met	Asp	Val
			100					105					110		
Trp	Gly	Gln	Gly	Thr	Thr	Val	Thr	Val	Ser	Ser					
			115					120							

<210> 16
 <211> 322
 <212> DNA
 <213> Homo sapiens

<400> 16

gacatccaga tgacccaatc tccatcttcc gtgtctgcat ctgtaggaga cagagtctcc 60
 atcacttgtc gggcgagtc ggggtattagc agctgggttag c ctgggtatca gcagaaacca 120
 gggaaagccc ctacgctcct aatctatgct gcatccagtt tgcaacgtgg ggtcccatca 180
 aggttcagcg gcagtggatc tgggacagat ttcactctca ccatcagcag cctgcagcct 240
 gaagattttg caacttactt ttgtcaacag gctaacagtt tcccattcac tttcggccct 300
 gggaccaaag tggatatcaa ac 322

<210> 17
 <211> 107
 <212> PRT
 <213> Homo sapiens

<400> 17
 Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Val Ser Ala Ser Val Gly
 1 5 10 15
 Asp Arg Val Ser Ile Thr Cys Arg Ala Ser Gln Gly Ile Ser Ser Trp
 20 25 30
 Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Thr Leu Leu Ile
 35 40 45
 Tyr Ala Ala Ser Ser Leu Gln Arg Gly Val Pro Ser Arg Phe Ser Gly
 50 55 60
 Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
 65 70 75 80
 Glu Asp Phe Ala Thr Tyr Phe Cys Gln Gln Ala Asn Ser Phe Pro Phe
 85 90 95
 Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
 100 105

<210> 18
 <211> 349
 <212> DNA
 <213> Homo sapiens

<400> 18
 caggtgcagc tgggtggagtc ggggggaggc gtgggtccagc ctgggaggtc cctgagactc 60
 tcctgtgcag cgtctggatt caccttcagt aaatatggca tgcactgggt ccgccaggct 120
 ccaggcaagg ggctggagtg ggtggcagtt ttatgggtatg atggaagtaa taaatactat 180
 gcagactccg tgaagggccg attcaccatc tccagag aca attccaagaa cagcgtgtat 240
 ctgcaaatga acagcctgag agccgaggac acggctgtgt attactgtgc gagaggtccg 300
 tactactttg actactgggg ccaggggaacc ctgggtcaccg tctcctcag 349

<210> 19
 <211> 116
 <212> PRT
 <213> Homo sapiens

<400> 19
 Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Lys Tyr
 20 25 30
 Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
 35 40 45
 Ala Val Leu Trp Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val
 50 55 60
 Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
 65 70 75 80
 Leu Gln Met Asn Ser Leu Arg Ala Glu Asp Thr Ala Val Tyr Tyr Cys

[illegible]

```
<210> 20
<211> 325
<212> DNA
<213> Homo sapiens
```

```
<400> 20
gaaattgtgt  tgacgcagtc  tccaggcacc  ctgtctttgt  ctccagggga  aagagccacc  60
ctctcctgca  gggccagtc  gagtgtagc  agcagctact  tagctggta  ccagcagaaa  120
cctggccagg  ctcccaggt  cctcatctat  ggtgcatcca  gcagggccac  tggcatccca  180
gacaggttca  ttggcagtg  gtctgggaca  gacttcactg  tcaccatcag  cagactggaa  240
ctcgaagatt  ttgcagtgta  ttactgtcag  cagtatggta  gttcacccgtg  gacgttcggc  300
caagggacca  aggtggaaat  caaac                                     325
```

```
<210> 21
<211> 108
<212> PRT
<213> Homo sapiens
```

<400> 21															
Glu	Ile	Val	Leu	Thr	Gln	Ser	Pro	Gly	Thr	Leu	Ser	Leu	Ser	Pro	Gly
1				5					10					15	
Glu	Arg	Ala	Thr	Leu	Ser	Cys	Arg	Ala	Ser	Gln	Ser	Val	Ser	Ser	Ser
			20					25					30		
Tyr	Leu	Ala	Trp	Tyr	Gln	Gln	Lys	Pro	Gly	Gln	Ala	Pro	Arg	Leu	Leu
		35					40					45			
Ile	Tyr	Gly	Ala	Ser	Ser	Arg	Ala	Thr	Gly	Ile	Pro	Asp	Arg	Phe	Ser
	50					55					60				
Gly	Ser	Gly	Ser	Gly	Thr	Asp	Phe	Thr	Val	Thr	Ile	Ser	Arg	Leu	Glu
65					70					75					80
Pro	Glu	Asp	Phe	Ala	Val	Tyr	Tyr	Cys	Gln	Gln	Tyr	Gly	Ser	Ser	Pro
			85						90					95	
Trp	Thr	Phe	Gly	Gln	Gly	Thr	Lys	Val	Glu	Ile	Lys				
			100					105							

```
<210> 22
<211> 322
<212> DNA
<213> Homo sapiens
```

```
<400> 22
gacatccaga tgaccaatc tccatcttcc gtgtccgcat ctgtaggaga cagagtctcc 60
atcacttgtc gggcgagtc ggggtattag agctggttag cctgggtatca gcagaaacca 120
gggaaagccc ctacgctcct aatctatgct gcatccagtt tgcaacgtgg ggtcccatca 180
aggttcagcg gcagtggatc tgggacagat ttcactctca ccatacgcag cctgcagcct 240
gaagattttg caacttactt ttgtcaacag gctaacagtt tccatttcac ttctggccct 300
gggaccaaag tggatatcaa ac                                     322
```

```
<210> 23
<211> 107
<212> PRT
<213> Homo.sapiens
```

<400> 23

```

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Val Ser Ala Ser Val Gly
 1           5           10           15
Asp Arg Val Ser Ile Thr Cys Arg Ala Ser Gln Gly Ile Ser Ser Trp
          20           25           30
Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Thr Leu Leu Ile
          35           40           45
Tyr Ala Ala Ser Ser Leu Gln Arg Gly Val Pro Ser Arg Phe Ser Gly
          50           55           60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65           70           75           80
Glu Asp Phe Ala Thr Tyr Phe Cys Gln Gln Ala Asn Ser Phe Pro Phe
          85           90           95
Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
          100          105

```

<210> 24

<211> 322

<212> DNA

<213> Homo sapiens

<400> 24

```

gacatccaga tgaccaatc tccatcttcc gtgtctgcat ctgtaggaga cagagt ctcc 60
atcaattgtc gggcgagtca ggggtattagc agctgggttag cctgggtatca gcagaaacca 120
gggaaagccc ctaagcgcct gatctatgct gcatccagtt tgcaacgtgg ggtcccatca 180
aggttcagcg gcagtggatc tgggacagat ttcactctca ccatcagcag cctgcagcct 240
gaagattttg caacttactt ttgtcaacag gctaa cagtt tccattcac ttctggccct 300
gggaccaaag tggatatcaa ac                                     322

```

<210> 25

<211> 107

<212> PRT

<213> Homo sapiens

<400> 25

```

Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Val Ser Ala Ser Val Gly
 1           5           10           15
Asp Arg Val Ser Ile Thr Cys Arg Ala Ser Gln Gly Ile Ser Ser Trp
          20           25           30
Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Arg Leu Ile
          35           40           45
Tyr Ala Ala Ser Ser Leu Gln Arg Gly Val Pro Ser Arg Phe Ser Gly
          50           55           60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
65           70           75           80
Glu Asp Phe Ala Thr Tyr Phe Cys Gln Gln Ala Asn Ser Phe Pro Phe
          85           90           95
Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
          100          105

```

<210> 26

<211> 322

<212> DNA

<213> Homo sapiens

<400> 26

gacatccaga tgacccagtc tccatcttcc gtgtctacat ctgtaggaga cagagtctcc 60
 atcacttgtc gggcgagtca ggggtattggc agctgggttag cctgggtatca gcagaaacca 120
 gggcaagccc ctacgctcct aatctatgct gcatccagtt tgcaacgtgg gg tcccatca 180
 agattcagcg gcagtggatc tgggacagat ttcactctca ccatcaacag cctgcagcct 240
 gaagattttg caacttactt ttgtcaacag gctaacagtt tcccattcac tttcggccct 300
 gggaccaaag tggatgtcaa ac 322

<210> 27
 <211> 107
 <212> PRT
 <213> Homo sapiens

<400> 27
 Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Val Ser Thr Ser Val Gly
 1 5 10 15
 Asp Arg Val Ser Ile Thr Cys Arg Ala Ser Gln Gly Ile Gly Ser Trp
 20 25 30
 Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Thr Leu Leu Ile
 35 40 45
 Tyr Ala Ala Ser Ser Leu Gln Arg Gly Val Pro Ser Arg Phe Ser Gly
 50 55 60
 Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Asn Ser Leu Gln Pro
 65 70 75 80
 Glu Asp Phe Ala Thr Tyr Phe Cys Gln Gln Ala Asn Ser Phe Pro Phe
 85 90 95
 Thr Phe Gly Pro Gly Thr Lys Val Asp Val Lys
 100 105

<210> 28
 <211> 322
 <212> DNA
 <213> Homo sapiens

<400> 28
 gacatccaga tgacccagtc tccatcttcc gtgtctgcat ctgtaggaga cagagtctcc 60
 atcacttgtc gggcgagtca ggggtattggc agctgggttag cctgggtatca gcagaaacca 120
 gggcaagccc ctacgctcct aatctatgct gcatccagtt tgcaacgtgg ggtcccatca 180
 agattcagcg gcagtggatc tgggacagat ttcactctca ccatcaacag cctgcagcct 240
 gaagattttg caacttactt ttgtcaacag gctaacagtt tcccattc ac tttcggccct 300
 gggaccaaag tggatgtcaa ac 322

<210> 29
 <211> 107
 <212> PRT
 <213> Homo sapiens

<400> 29
 Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Val Ser Ala Ser Val Gly
 1 5 10 15
 Asp Arg Val Ser Ile Thr Cys Arg Ala Ser Gln Gly Ile Gly Ser Trp
 20 25 30
 Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Thr Leu Leu Ile
 35 40 45
 Tyr Ala Ala Ser Ser Leu Gln Arg Gly Val Pro Ser Arg Phe Ser Gly
 50 55 60
 Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Asn Ser Leu Gln Pro
 65 70 75 80
 Glu Asp Phe Ala Thr Tyr Phe Cys Gln Gln Ala Asn Ser Phe Pro Phe

85 90 95
 Thr Phe Gly Pro Gly Thr Lys Val Asp Val Lys
 100 105

<210> 30
 <211> 349
 <212> DNA
 <213> Homo sapiens

<400> 30
 cagggtgcagc tgggtggagtc tggggggaggc gtgggtccagc ctggggaggtc cctgagactc 60
 tcctgtgcag cgtctggatt caccttcagt agctatggca tgcactgggt ccgccaggct 120
 ccaggcaagg ggctggagtg ggtggcagtt atatggtttg atggaaataa taaattctat 180
 gcagactccg tgaagggccg attcaccatc tccagagaca attccaagaa cacgctgtat 240
 ctgcaaataa acagcctgag agtcgaggac acggctgtgt attactgtgc gcgaggcggg 300
 agctactggg actactgggg ccagggaacc ctgggtcaccg tctcctcag 349

<210> 31
 <211> 116
 <212> PRT
 <213> Homo sapiens

<400> 31
 Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
 1 5 10 15
 Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
 20 25 30
 Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
 35 40 45
 Ala Val Ile Trp Phe Asp Gly Asn Asn Lys Phe Tyr Ala Asp Ser Val
 50 55 60
 Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
 65 70 75 80
 Leu Gln Met Asn Ser Leu Arg Val Glu Asp Thr Ala Val Tyr Tyr Cys
 85 90 95
 Ala Arg Gly Gly Ser Tyr Trp Asp Tyr Trp Gly Gln Gly Thr Leu Val
 100 105 110
 Thr Val Ser Ser
 115

<210> 32
 <211> 336
 <212> DNA
 <213> Homo sapiens

<400> 32
 gatattgtga tgaccagac tccactcttc tcatttgtca tgattggaca gccggcctcc 60
 atctcctgca ggtctaggca aagcctcgta cacagtgatg gaaacaccta cttgaattgg 120
 cttcagcaga ggccaggcca gcctccaaga ctccctaattt ataagacttc taaccgggtc 180
 tctgggggtcc cagatagatt cagtggcagt ggggcaggga cagatttcac actgaaaa tc 240
 agcagggtgg aagctgagga tgtcgggggtt tattactgta tgcaagctac acaatttcct 300
 atcacgttcg gccaaaggac acgactggag attaaa 336

<210> 33
 <211> 112
 <212> PRT
 <213> Homo sapiens

<400> 33

```

Asp Ile Val Met Thr Gln Thr Pro Leu Phe Ser Phe Val Met Ile Gly
 1           5           10           15
Gln Pro Ala Ser Ile Ser Cys Arg Ser Arg Gln Ser Leu Val His Ser
          20           25           30
Asp Gly Asn Thr Tyr Leu Asn Trp Leu Gln Gln Arg Pro Gly Gln Pro
          35           40           45
Pro Arg Leu Leu Ile Tyr Lys Thr Ser Asn Arg Phe Ser Gly Val Pro
          50           55           60
Asp Arg Phe Ser Gly Ser Gly Ala Gly Thr Asp Phe Thr Leu Lys Ile
65           70           75           80
Ser Arg Val Glu Ala Glu Asp Val Gly Val Tyr Tyr Cys Met Gln Ala
          85           90           95
Thr Gln Phe Pro Ile Thr Phe Gly Gln Gly Thr Arg Leu Glu Ile Lys
          100          105          110

```

<210> 34

<211> 370

<212> DNA

<213> Homo sapiens

<400> 34

```

caggtgcagc tgggtggagtc tggggggaggc gtgggtccagc ctgggagggtc cctgagactc 60
tcctgtgcag cctctggatt caccttcagt agctatggc a tgcactgggt ccgccaggct 120
ccaggcaagg ggctggagtg ggtggcagtt atatcatatg atggaagtaa taaatactat 180
gcagactccg tgaagggccg attcaccatc tccagagaca attccaagaa cacgctgtat 240
ctgcaaataa acagcctgag agttgaggac acggctgtgt attactgtgc gaaagatcac 300
gggtgggagg acgtcta cga ctacgggtatg gacgtctggg gcccaaggac cacggtcacc 360
gtctcctcag                                     370

```

<210> 35

<211> 123

<212> PRT

<213> Homo sapiens

<400> 35

```

Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val Val Gln Pro Gly Arg
 1           5           10           15
Ser Leu Arg Leu Ser Cys Ala Ala Ser Gly Phe Thr Phe Ser Ser Tyr
          20           25           30
Gly Met His Trp Val Arg Gln Ala Pro Gly Lys Gly Leu Glu Trp Val
          35           40           45
Ala Val Ile Ser Tyr Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val
          50           55           60
Lys Gly Arg Phe Thr Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr
65           70           75           80
Leu Gln Met Asn Ser Leu Arg Val Glu Asp Thr Ala Val Tyr Tyr Cys
          85           90           95
Ala Lys Asp His Gly Gly Arg Tyr Val Tyr Asp Tyr Gly Met Asp Val
          100          105          110
Trp Gly Gln Gly Thr Thr Val Thr Val Ser Ser
          115          120

```

<210> 36

<211> 322

<212> DNA

<213> Homo sapiens

<400> 36

```
gacatccaga tgaccagtc tccatcttcc gtgtctgcat ctg taggaga cagagtctcc 60
atcacttgtc gggcgagtc ggggtattggc agctgggtag cctgggtatca gcagaaacca 120
gggcaagccc ctacgtctct aatctatgct gcctccagtt tgcaacgtgg ggtcccatca 180
agattcagcg gcagtggatc tgggacagat ttcactctca ccatcaacag cctgcagcct 240
gaagattttg caacttactt tt gtcaacag gctaacagtt tccattcac tttcggccct 300
gggaccaaag tggatgtcaa ac                                     322
```

<210> 37

<211> 107

<212> PRT

<213> Homo sapiens

<400> 37

```
Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Val Ser Ala Ser Val Gly
 1           5           10           15
Asp Arg Val Ser Ile Thr Cys Arg Ala Ser Gln Gly Ile Gly Ser Trp
          20          25          30
Leu Ala Trp Tyr Gln Gln Lys Pro Gly Gln Ala Pro Thr Leu Leu Ile
          35          40          45
Tyr Ala Ala Ser Ser Leu Gln Arg Gly Val Pro Ser Arg Phe Ser Gly
          50          55          60
Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Asn Ser Leu Gln Pro
65          70          75          80
Glu Asp Phe Ala Thr Tyr Phe Cys Gln Gln Ala Asn Ser Phe Pro Phe
          85          90          95
Thr Phe Gly Pro Gly Thr Lys Val Asp Val Lys
          100          105
```

<210> 38

<211> 348

<212> DNA

<213> Homo sapiens

<400> 38

```
caggtgcagc tgcaggagtc gggcccagga ctggtgaagc cttcggagac cctgtccctc 60
acctgcactg tctctgggtgc ctccatcagt aattactact ggagctggat ccggcagccc 120
ccagggaagg gactggagtg gattgggtat gtctcttaca gtgggagtac gtactacaac 180
ccctccctca agggctcgagt caccatgtca gtagacacgt ccaagaacca gttctccctg 240
aagctgagct ctgtgaccgc tgcggacacg gccgtgtatt actgtgagag agaaaaactg 300
gggattggag actactgggg ccagggaacc ctggtcaccg tctcctca 348
```

<210> 39

<211> 116

<212> PRT

<213> Homo sapiens

<400> 39

```
Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Glu
 1           5           10           15
Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Ala Ser Ile Ser Asn Tyr
          20          25          30
Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Ile
          35          40          45
Gly Tyr Val Ser Tyr Ser Gly Ser Thr Tyr Tyr Asn Pro Ser Leu Lys
          50          55          60
```

Gly Arg Val Thr Met Ser Val Asp Thr Ser Lys Asn Gln Phe Ser Leu
 65 70 75 80
 Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
 85 90 95
 Arg Glu Lys Leu Gly Ile Gly Asp Tyr Trp Gly Gln Gly Thr Leu Val
 100 105 110
 Thr Val Ser Ser
 115

<210> 40
 <211> 322
 <212> DNA
 <213> Homo sapiens

<400> 40
 gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60
 atcacttgcc gggcaagtca gggcattaaa aatgatttag gctggtatca gcagaaacca 120
 gggaaagccc ctaagcgct gatctatgct gcatccagtt tgcaaagtgg ggtcccatca 180
 aggttcagcg gcagtggatc tgggacagaa tt cactctca caatcagcag cctgcagcct 240
 gaagattttg caactatta ctgtctacag cataatagtt atccgtgcag ttttggccag 300
 gggaccaagc tggagatcaa ac 322

<210> 41
 <211> 107
 <212> PRT
 <213> Homo sapiens

<400> 41
 Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1 5 10 15
 Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Lys Asn Asp
 20 25 30
 Leu Gly Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Arg Leu Ile
 35 40 45
 Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
 50 55 60
 Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
 65 70 75 80
 Glu Asp Phe Ala Thr Tyr Tyr Cys Leu Gln His Asn Ser Tyr Pro Cys
 85 90 95
 Ser Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
 100 105

<210> 42
 <211> 354
 <212> DNA
 <213> Homo sapiens

<400> 42
 caggtgcagc tgcaggagtc gggcccagga ctggtgaagc cttcacagac cctgtccctc 60
 acctgcactg tctctggtgc ctccatcagc agtgggtgctt actactggag ttggatccgc 120
 cagcaccag ggaaggcct ggagtggatt gggtagatct ataagagtga gacctcctac 180
 tacaaccgt ccctcaagag tcgacttacc ctatcagtag acacgtctaa gaaccagttc 240
 tccctgaacc tgatctctgt gactgccgcg gacacggcgc tgtattattg tgcgagagat 300
 aaactgggga tcgcggacta ctggggcc ag ggaaccctgg tcaccgtctc ctca 354

<210> 43

<211> 118
 <212> PRT
 <213> Homo sapiens

<400> 43
 Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Gln
 1 5 10 15
 Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Ala Ser Ile Ser Ser Gly
 20 25 30
 Ala Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro Gly Lys Gly Leu Glu
 35 40 45
 Trp Ile Gly Tyr Ile Tyr Lys Ser Glu Thr Ser Tyr Tyr Asn Pro Ser
 50 55 60
 Leu Lys Ser Arg Leu Thr Leu Ser Val Asp Thr Ser Lys Asn Gln Phe
 65 70 75 80
 Ser Leu Asn Leu Ile Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr
 85 90 95
 Cys Ala Arg Asp Lys Leu Gly Ile Ala Asp Tyr Trp Gly Gln Gly Thr
 100 105 110
 Leu Val Thr Val Ser Ser
 115

<210> 44
 <211> 322
 <212> DNA
 <213> Homo sapiens

<400> 44
 gacatccaga tgaccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60
 atcacttgcc gggcaagtca ggacattaga aatgatttag gctgggtatca gcagaaacca 120
 gggaaagccc ctaagcgct gatctatg ct gcatccaatt tgcaaagtgg ggtcccatca 180
 aggttcagcg gcagtggatc tgggacagaa ttcactctca caatcagcag cctgcagcct 240
 gaagattttg caacttatta ctgtctacag cataatagct accctccac tttcggcgga 300
 gggaccaagg tggaaatcaa ac 322

<210> 45
 <211> 107
 <212> PRT
 <213> Homo sapiens

<400> 45
 Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1 5 10 15
 Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asp Ile Arg Asn Asp
 20 25 30
 Leu Gly Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Arg Leu Ile
 35 40 45
 Tyr Ala Ala Ser Asn Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
 50 55 60
 Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
 65 70 75 80
 Glu Asp Phe Ala Thr Tyr Tyr Cys Leu Gln His Asn Ser Tyr Pro Pro
 85 90 95
 Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
 100 105

<210> 46

<211> 349
 <212> DNA
 <213> Homo sapiens

<400> 46
 caggtgcagc tgcaggagtc gggcccagga ctggtgaagc cttc ggagac cctgtccctc 60
 acctgcactg tctctggtgt ctccatcagt aattactact ggagctggat ccggcagtc 120
 ccaggaagg gactggagtg gattggatat atctattaca gtgggagtc ctattacaac 180
 ccctccctca agagtcgagt cactatatct gcagacacgt ccaagaacca attctccctg 240
 aagctgagct ctgtgaccgc tgc ggacacg gccatttatt actgtgagag agaaaaactg 300
 gggattggag actactgggg ccaggaacc ctggtcaccg tctctcag 349

<210> 47
 <211> 116
 <212> PRT
 <213> Homo sapiens

<400> 47
 Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Glu
 1 5 10 15
 Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Val Ser Ile Ser Asn Tyr
 20 25 30
 Tyr Trp Ser Trp Ile Arg Gln Ser Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Tyr Ile Tyr Tyr Ser Gly Ser Pro Tyr Tyr Asn Pro Ser Leu Lys
 50 55 60
 Ser Arg Val Thr Ile Ser Ala Asp Thr Ser Lys Asn Gln Phe Ser Leu
 65 70 75 80
 Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Ile Tyr Tyr Cys Ala
 85 90 95
 Arg Glu Lys Leu Gly Ile Gly Asp Tyr Trp Gly Gln Gly Thr Leu Val
 100 105 110
 Thr Val Ser Ser
 115

<210> 48
 <211> 322
 <212> DNA
 <213> Homo sapiens

<400> 48
 gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtcggaga cagagtcacc 60
 atcacttgcc gggcaagtca gggcattaga aatgattt ag gctggatatca gcagaaacca 120
 gggaaagccc ctaagcgct gatctatgct gcatccagtt tgcaaagtgg ggtcccatca 180
 aggttcagcg gcagtggatc tgggacagaa ttcactctca caatcagcag cctgcagcct 240
 gaagattttg caacttatta ctgtctacag cataatagtt accctccac tttcggccct 300
 gggaccaagg tggata tcaa ac 322

<210> 49
 <211> 107
 <212> PRT
 <213> Homo sapiens

<400> 49
 Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1 5 10 15
 Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Arg Asn Asp
 20 25 30

Leu Gly Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Arg Leu Ile
 35 40 45
 Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
 50 55 60
 Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
 65 70 75 80
 Glu Asp Phe Ala Thr Tyr Tyr Cys Leu Gln His Asn Ser Tyr Pro Pro
 85 90 95
 Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys
 100 105

<210> 50
 <211> 349
 <212> DNA
 <213> Homo sapiens

<400> 50
 caggtgcagc tgcaggagtc gggcccagga ctggtgaagc cttcggagac cctgtccctc 60
 acctgcactg tctctggtgg ctccatcagt cgttactact ggagctggat ccggcagccc 120
 ccagggaagg gactggagtg gattgggtat gtctcttaca gtgggagcac ctactacaac 180
 ccctccctca agagtcgagt caccatatca gta gacacgt ccaagaacca gttctccctg 240
 aagctgagct ctgtgaccgc tgcggacacg gccgtgtatt actgtgcgag agataaactg 300
 gggattggag actactgggg ccagggaacc ctggtcaccg tctcctcag 349

<210> 51
 <211> 116
 <212> PRT
 <213> Homo sapiens

<400> 51
 Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Ser Glu
 1 5 10 15
 Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Arg Tyr
 20 25 30
 Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys Gly Leu Glu Trp Ile
 35 40 45
 Gly Tyr Val Ser Tyr Ser Gly Ser Thr Tyr Tyr Asn Pro Ser Leu Lys
 50 55 60
 Ser Arg Val Thr Ile Ser Val Asp Thr Ser Lys Asn Gln Phe Ser Leu
 65 70 75 80
 Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr Cys Ala
 85 90 95
 Arg Asp Lys Leu Gly Ile Gly Asp Tyr Trp Gly Gln Gly Thr Leu Val
 100 105 110
 Thr Val Ser Ser
 115

<210> 52
 <211> 322
 <212> DNA
 <213> Homo sapiens

<400> 52
 gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtagg aga cagagtcacc 60
 atcaattgcc gggcaagtca gggcattaga aatgatttag gctggtatca gcagaaaccg 120
 gggaaagccc ctaagcgcct gatctatgct gcacccagtt tgcaaagtgg ggtcccatca 180
 aggttcagcg gcagtggatc tgggacagaa ttcactctca caatcagcag cctgcagcct 240

gaagattttg caacttatta ctgtct acag cataatagtt acccgtgcag ttttggccag 300
 gggaccaagc tggagatcaa ac 322

<210> 53
 <211> 107
 <212> PRT
 <213> Homo sapiens

<400> 53
 Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1 5 10 15
 Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly Ile Arg Asn Asp
 20 25 30
 Leu Gly Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Arg Leu Ile
 35 40 45
 Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
 50 55 60
 Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
 65 70 75 80
 Glu Asp Phe Ala Thr Tyr Tyr Cys Leu Gln His Asn Ser Tyr Pro Cys
 85 90 95
 Ser Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys
 100 105

<210> 54
 <211> 355
 <212> DNA
 <213> Homo sapiens

<400> 54
 caggtgcagc tgcaggagtc gggcccagga ctggtgaagc ctttacagac cctgtccctc 60
 acctgcactg tctctgggtg ctccatcagc agtgggtgtt actactggag ctggatccgc 120
 cagcaccacg ggaagggcct ggagtggatt gggtagatct ata acagtaa gacctcctat 180
 tataatccgt ccctcaagag tgcacttacc ctatcagtag acacgtctaa gaaccagttc 240
 tccctgaacc tgatctctgt gactgccgcg gacacggccg tgtattactg tgcgagagat 300
 aaattgggga tcgcggacta ctggggccag ggaaccctgg tcaccgtctc ctcag 355

<210> 55
 <211> 118
 <212> PRT
 <213> Homo sapiens

<400> 55
 Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys Pro Leu Gln
 1 5 10 15
 Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile Ser Ser Gly
 20 25 30
 Val Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro Gly Lys Gly Leu Glu
 35 40 45
 Trp Ile Gly Tyr Ile Tyr Asn Ser Lys Thr Ser Tyr Tyr Asn Pro Ser
 50 55 60
 Leu Lys Ser Arg Leu Thr Leu Ser Val Asp Thr Ser Lys Asn Gln Phe
 65 70 75 80
 Ser Leu Asn Leu Ile Ser Val Thr Ala Ala Asp Thr Ala Val Tyr Tyr
 85 90 95
 Cys Ala Arg Asp Lys Leu Gly Ile Ala Asp Tyr Trp Gly Gln Gly Thr
 100 105 110
 Leu Val Thr Val Ser Ser

115

<210> 56
 <211> 322
 <212> DNA
 <213> Homo sapiens

<400> 56
 gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 60
 atcacttgcc ggacaagtca gggcattaga aatgatttag gctgggtatca gcagaaacca 120
 gggaaagccc ctaagcgct gatctatgct gcatccagtt tgcaaagtgg ggtcccatca 180
 aggttcagcg gcagtggatc t gggacagaa ttcactctca caatcagcag cctgcagcct 240
 gaagattttg caacttatta ctgtctacag cataatagct accctccac tttcggcgga 300
 gggaccaagg tgagatcaa ac 322

<210> 57
 <211> 107
 <212> PRT
 <213> Homo sapiens

<400> 57
 Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser Ala Ser Val Gly
 1 5 10 15
 Asp Arg Val Thr Ile Thr Cys Arg Thr Ser Gln Gly Ile Arg Asn Asp
 20 25 30
 Leu Gly Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro Lys Arg Leu Ile
 35 40 45
 Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser Arg Phe Ser Gly
 50 55 60
 Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser Ser Leu Gln Pro
 65 70 75 80
 Glu Asp Phe Ala Thr Tyr Tyr Cys Leu Gln His Asn Ser Tyr Pro Pro
 85 90 95
 Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys
 100 105

<210> 58
 <211> 34
 <212> PRT
 <213> Homo sapiens

<400> 58
 Gly Ala Ser Ile Ser Ser Tyr Tyr Trp Ser Tyr Ile Tyr Tyr Ser Gly
 1 5 10 15
 Ser Thr Asn Tyr Asn Pro Ser Leu Lys Ser Glu Arg Leu Gly Ile Gly
 20 25 30
 Asp Tyr

<210> 59
 <211> 41
 <212> PRT
 <213> Homo sapiens

<400> 59
 Gly Phe Thr Phe Ser Ser Tyr Gly Me t His Val Ile Ser Tyr Asp Gly

19/46

```
      1             5             10             15
Ser Asn Lys Tyr Tyr Ala Asp Ser Val Lys Gly Asp His Gly Gly Arg
      20             25             30
Tyr Val Tyr Asp Tyr Gly Met Asp Val
      35             40
```

<210> 60
<211> 34
<212> PRT
<213> Homo sapiens

```
<400> 60
Gly Phe Thr Phe Ser Lys Tyr Gly Met His Val Leu Trp Tyr Asp Gly
      1             5             10             15
Ser Asn Lys Tyr Tyr Ala Asp Ser Val Lys Gly Asp Gly His Tyr Phe
      20             25             30
Asp Tyr
```

<210> 61
<211> 34
<212> PRT
<213> Homo sapiens

```
<400> 61
Gly Phe Thr Phe Ser Ser Tyr Gly Met His Val Ile Trp Phe Asp Gly
      1             5             10             15
Asn Asn Lys Phe Tyr Ala Asp Ser Val Lys Gly Ala Pro Ala Tyr Trp
      20             25             30
Asp Tyr
```

<210> 62
<211> 27
<212> PRT
<213> Homo sapiens

```
<400> 62
Arg Ala Ser Gln Gly Ile Arg Asn Asp Leu Gly Ala Ala Ser Ser Leu
      1             5             10             15
Gln Ser Leu Gln His Asn Thr Tyr Pro Pro Thr
      20             25
```

<210> 63
<211> 27
<212> PRT
<213> Homo sapiens

```
<400> 63
Arg Ala Ser Gln Gly Ile Ser Ser Trp Leu Ala Ala Ala Ser Thr Leu
      1             5             10             15
Gln Arg Gln Gln Ala Asn Ser Phe Pro Phe Thr
      20             25
```

<210> 64
 <211> 29
 <212> PRT
 <213> Homo sapiens

<400> 64
 Arg Ala Ser Gln Gly Ile Ser Ser Trp Leu Val Ala Leu Ala Ala Ser
 1 5 10 15
 Ser Leu Gln Arg Gln Gln Ala Asn Ser Phe Pro Phe Thr
 20 25

<210> 65
 <211> 27
 <212> PRT
 <213> Homo sapiens

<400> 65
 Arg Ala Ser Gln Gly Ile Ser Ser Trp Leu Ala Ala Ala Ser Ser Leu
 1 5 10 15
 Gln Arg Gln Gln Ala Asn Ser Phe Pro Phe Thr
 20 25

<210> 66
 <211> 27
 <212> PRT
 <213> Homo sapiens

<400> 66
 Arg Ala Ser Gln Gly Ile Gly Ser Trp Leu Ala Ala Ala Ser Ser Leu
 1 5 10 15
 Gln Arg Gln Gln Ala Asn Ser Phe Pro Phe Thr
 20 25

<210> 67
 <211> 32
 <212> PRT
 <213> Homo sapiens

<400> 67
 Arg Ser Arg Gln Ser Leu Val His Ser Asp Gly Asn Thr Tyr Leu Asn
 1 5 10 15
 Lys Thr Ser Asn Arg Phe Ser Met Gln Ala Thr Gln Phe Pro Ile Thr
 20 25 30

<210> 68
 <211> 28
 <212> PRT
 <213> Homo sapiens

<400> 68
 Arg Ala Ser Gln Ser Val Ser Ser Ser Tyr Leu Ala Gly Ala Ser Ser
 1 5 10 15
 Arg Ala Thr Gln Gln Tyr Gly Ser Ser Pro Trp Thr
 20 25

<210> 69
 <211> 1990
 <212> DNA
 <213> Homo sapiens

<400> 69
 atgaagcatt tgtggttctt ccttctccta gtggcagctc ccagatgggt cctgtcccag 60
 gtgcagctgc aggagtcggg ccaggactg gtgaagcctt cggagaccct gtccctcacc 120
 tgactgtct ctggtgcctc catcagtagt tactactgga gctggatccg gcagcccca 180
 gggaagggac tggagtggat tgggtatatt tattacagt ggagcaccaa ctacaacccc 240
 tccctcaaga gtcgagtcac catatcagta gacacgtcca agaaccagtt ctccctgaag 300
 ctgaggtctg tgaccgtgc ggacacggcc gtgtattact gtgcgagaga gcgactgggg 360
 atcggggact actggggcca aggaaccctg gtcaccgtct cctcagcctc caccaagggc 420
 ccatcggtct tccccctggc gccctgctct agaagcacct ccgagagcac agccgccctg 480
 ggctgcctgg tcaaggacta cttccccgaa ccggtgacgg tgtcgtggaa ctcaggcgct 540
 ctgaccagcg gcgtgcacac cttcccagct gtcctacagt cctcaggact ctactccctc 600
 agcagcgtgg tgaccgtgcc ctccagcaac ttcggcacc agacctacac ctgcaacgta 660
 gatcacaagc ccagcaacac caaggtggac aagacagtt g gtgagaggcc agctcagggg 720
 gggaggggtgt ctgctggaag ccaggctcag ccctcctgcc tggacgcacc ccggtctgtc 780
 agccccagcc cagggcagca aggcaggccc catctgtctc ctacccgga ggctctgcc 840
 cgtccccctc atgctcagg agagggtctt ctggcttttt ccaccaggct ccaggcaggc 900
 acaggctggg tgccct acc ccaggccctt cacacacagg ggcagggtgt tggctcagac 960
 ctgcaaaaag ccatatccgg gaggaccctg ccctgacct aagccgacc caaaggccaa 1020
 actgtccact ccctcagctc ggacaccttc tctcctccca gatccgagta actcccaatc 1080
 ttctctctgc agagcgcaaa tgttgtgtcg agtggccacc gtgcccaggt aagccag ccc 1140
 aggctctgcc tcccagctca aggcgggaca ggtgccctag agtagcctgc atccaggga 1200
 agggccagc tgggtgctga cagctccacc tccatctctt cctcagcacc acctgtggca 1260
 ggaccgtcag tcttctctt cccccaaaa cccaaggaca cctcatgat ctcccgacc 1320
 cctgaggtca cgtgcgtggt ggtggacgtg a gccacgaag accccgaggt ccagttcaac 1380
 tggtagctgg acggcgtgga ggtgcataat gccaaagaaa agccacggga ggagcagttc 1440
 aacagcacgt tccgtgtggt cagcgtcctc accgttgtgc accaggactg gctgaacggc 1500
 aaggagtaca agtgcaaggt ctccaacaaa ggctctccag ccccatcga gaaaaccatc 1560
 tccaaaacca aaggtgggac ccgcggggta tgagggccac atggacagag gccggtcgg 1620
 cccaccctct gccctgggag tgaccgtgt gccaacctct gtcctacag ggcagccccg 1680
 agaaccacag gtgtacacc tgccccatc ccgggaggag atgaccaaga accaggctcag 1740
 cctgacctgc ctggtcaaa gcttctaccc cagcgacatc gccgt ggagt gggagagcaa 1800
 tgggcagccg gagaacaact acaagaccac acctcccatg ctggactccg acggtcctt 1860
 cttctctac agcaagctca ccgtggacaa gagcagggtg cagcagggga acgtctctc 1920
 atgctccgt atgcatgagg ctctgcacaa ccactacacg cagaagagcc tctccctgtc 1980
 tccgggtaaa 1990

<210> 70
 <211> 1990
 <212> DNA
 <213> Homo sapiens

<400> 70
 tttaccgga gacagggaga ggctcttctc cgtgtagtgg ttgtgcagag cctcatgcat 60
 cacggagcat gagaagacgt tccccgtct ccacctgtc ttgtccacgg tagcttct 120
 gtagaggaag aaggagccgt cggagtcag catgggaggt gtggtcttgt agttgtctc 180
 cggctgcca ttgctctccc actccacggc gatgtcgtg gggtagaagc ctttgaccag 240
 gcaggctcagg ctgacctggt tcttggtcat ctctcccg gatgggggca ggggtgtacac 300
 ctgtggttct cggggtgcc ctgtaggac agaggttggc acagcgtc a ctcccagggc 360
 agagggtggg ccgagccggc ctctgtccat gtggccctca taccgcgg gtcccactt 420
 tggttttgga gatggtttt tcatggggg ctgggaggcc tttgttgag accttgact 480
 tgtactcct gccgttcagc cagtcctggt gcacaacggt gaggacgctg accacagga 540
 acgtgctgt gaactgctc tcccggt gct ttgtcttggc attatgcacc tccacgctg 600
 ccacgtacca gttgaactgg acctcggggt ctctgtggct cagctccacc accacgcag 660

```

tgacctcagg ggtccgggag atcatgaggg tgccttggg ttttggggg aagaggaaga 720
ctgacgggtcc tgccacaggt ggtgctgagg aagagatgga ggtggacgtg tcagcaccca 780
gctggggcct gtccctggat gcaggctact ctagggcacc tgtccgcct tgagctggag 840
ggcgaggcct gggctggctt acctgggcac ggtgggcact cgacacaaca tttgcgtct 900
gcagagagaa gattgggagt tactcggatc tgggaggaga gaaggtgtcc gagctgaggg 960
agtggacagt ttggcctttg gggtcggctt aggtcagggg cagggtc ctc ccggatatgg 1020
cttttggcag gtctgagcca agcacctgcc cctgtgtgtg aagggcctgg ggtaggggca 1080
cccagcctgt gcctgcctgg agcctgggtg aaaaagccag aagaccctct ccctgagcat 1140
gagtggggcg ggcagaggcc tccgggtgag gagacagatg gggcctgcct tgctgccctg 1200
ggctggggct gcacagccgg ggtgcgtcca ggcaggaggg ctgagcctgg cttccagcag 1260
acaccctccc tccctgagct ggctctcac caactgtctt gtccaccttg gtgttgctgg 1320
gcttgatgac tacgttgacg gtgtaggtct gggcgccgaa gttgctggag ggcacgggtca 1380
ccacgctgct gaggagtag agtcctgagg actgtaggac agctgggaag gtgtgcacgc 1440
cgctggtcag agcgctgag ttccacgaca ccgtcaccgg ttcggggaag tagtccttga 1500
ccaggcagcc caggcggtg gtgctctcgg aggtgcttct agagcagggc gccaggggga 1560
agaccgatgg gcccttggtg gaggctgagg agacgggtgac cagggttcct tggccccagt 1620
agtccccgat cccagtcgc tctctcgcac agtaa tacac ggccgtgtcc gcagcgggtca 1680
cagacctcag cttcaggag aactggttct tggacgtgtc tactgatatg gtgactcgac 1740
tcttgaggga ggggttgtag ttggtgctcc cactgtaata gatatacca atccactcca 1800
gtcccttccc tgggggctgc cggatccagc tccagtagta actactgatg gaggcaccag 1860
agacagtgca ggtgaggagc agggctctcc aaggcttcac cagtcctggg cccgactcct 1920
gcagctgcac ctgggacagg acccatctgg gagctgccac taggagaagg aagaaccaca 1980
gatgcttcat                                     1990

```

<210> 71

<211> 241

<212> PRT

<213> Homo sapiens

<400> 71

```

Met Lys His Leu Trp Phe Phe Leu Leu Leu Val Ala Leu Ala Ala Pro
 1          5          10          15
Arg Trp Val Leu Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
          20          25          30
Val Lys Pro Ser Glu Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Ala
          35          40          45
Ser Ile Ser Ser Tyr Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys
          50          55          60
Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Ser Gly Ser Thr Asn Tyr
65          70          75          80
Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Ala Ser Pro Thr
          85          90          95
Ser Lys Asn Gln Phe Ser Leu Lys Leu Arg Ser Val Thr Ala Ala Asp
          100          105          110
Thr Ala Val Tyr Tyr Cys Ala Arg Glu Arg Leu Gly Ile Gly Asp Tyr
          115          120          125
Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly
          130          135          140
Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser
145          150          155          160
Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val
          165          170          175
Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe
          180          185          190
Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val
          195          200          205
Thr Val Pro Ser Ser Asn Phe Gly Thr Gln Thr Tyr Thr Cys Asn Val
          210          215          2 20
Ala Ser Pro His Lys Pro Ser Asn Thr Lys Val Ala Ser Pro Lys Thr

```

225
Val

230

235

240

<210> 72
<211> 12
<212> PRT
<213> Homo sapiens

<400> 72
Glu Arg Lys Cys Cys Val Glu Cys Pro Pro Cys Pro
1 5 10

<210> 73
<211> 115
<212> PRT
<213> Homo sapiens

<400> 73
Ala Pro Pro Val Ala Leu Ala Gly Pro Ser Val Phe Leu Phe Pro Pro
1 5 10 15
Lys Pro Lys Asp Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys
20 25 30
Val Val Val Ala Ser Pro Val Ser His Glu Asp Pro Glu Val Gln Phe
35 40 45
Asn Trp Tyr Val Ala Ser Pro Gly Val Glu Val His Asn Ala Lys Thr
50 55 60
Lys Pro Arg Glu Glu Gln Phe Asn Ser Thr Phe Arg Val Val Ser Val
65 70 75 80
Leu Thr Val Val His Gln Asp Trp Leu Asn Gly Lys Glu Tyr Lys Cys
85 90 95
Lys Val Ser Asn Lys Gly Leu Pro Ala Pro Ile Glu Lys Thr Ile Ser
100 105 110
Lys Thr Lys
115

<210> 74
<211> 107
<212> PRT
<213> Homo sapiens

<400> 74
Gly Gln Pro Arg Glu Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu
1 5 10 15
Glu Met Thr Lys Asn Gln Val Ser Leu Thr Cys L eu Val Lys Gly Phe
20 25 30
Tyr Pro Ser Asp Ile Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu
35 40 45
Asn Asn Tyr Lys Thr Thr Pro Met Leu Asp Ser Asp Gly Ser Phe
50 55 60
Phe Leu Tyr Ser Lys Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly
65 70 75 80
Asn Val Phe Ser Cys Ser Val Met His Glu A la Leu His Asn His Tyr
85 90 95
Thr Gln Lys Ser Leu Ser Leu Ser Pro Gly Lys
100 105

<210> 75
 <211> 310
 <212> PRT
 <213> Homo sapiens

<400> 75
 Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr
 1 5 10 15
 Phe Pro Glu Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser
 20 25 30
 Gly Val His Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser
 35 40 45
 Leu Ser Ser Val Val Thr Val Pro Ser Ser Asn Phe Gly Thr Gln Thr
 50 55 60
 Tyr Thr Cys Asn Val Asp His Lys Pro Ser Asn Thr Lys Val Asp Lys
 65 70 75 80
 Thr Val Glu Arg Lys Cys Cys Val Glu Cys Pro Pro Cys Pro Ala Pro
 85 90 95
 Pro Val Ala Gly Pro Ser Val Phe Leu Phe Pro Pro Lys Pro Lys Asp
 100 105 110
 Thr Leu Met Ile Ser Arg Thr Pro Glu Val Thr Cys Val Val Val Asp
 115 120 125
 Val Ser His Glu Asp Pro Glu Val Gln Phe Asn Trp Tyr Val Asp Gly
 130 135 140
 Val Glu Val His Asn Ala Lys Thr Lys Pro Arg Glu Glu Gln Phe Asn
 145 150 155 160
 Ser Thr Phe Arg Val Val Ser Val Leu Thr Val Val His Gln Asp Trp
 165 170 175
 Leu Asn Gly Lys Glu Tyr Lys Cys Lys Val Ser Asn Lys Gly Leu Pro
 180 185 190
 Ala Pro Ile Glu Lys Thr Ile Ser Lys Thr Lys Gly Gln Pro Arg Glu
 195 200 205
 Pro Gln Val Tyr Thr Leu Pro Pro Ser Arg Glu Glu Met Thr Lys Asn
 210 215 220
 Gln Val Ser Leu Thr Cys Leu Val Lys Gly Phe Tyr Pro Ser Asp Ile
 225 230 235 240
 Ala Val Glu Trp Glu Ser Asn Gly Gln Pro Glu Asn Asn Tyr Lys Thr
 245 250 255
 Thr Pro Pro Met Leu Asp Ser Asp Gly Ser Phe Phe Leu Tyr Ser Lys
 260 265 270
 Leu Thr Val Asp Lys Ser Arg Trp Gln Gln Gly Asn Val Phe Ser Cys
 275 280 285
 Ser Val Met His Glu Ala Leu His Asn His Tyr Thr Gln Lys Ser Leu
 290 295 300
 Ser Leu Ser Pro Gly Lys
 305 310

<210> 76
 <211> 552
 <212> DNA
 <213> Homo sapiens

<400> 76
 atgagggtcc ccgctcagct cctggggctc ctgctgctct ggttcccagg tgccaggtgt 60
 aagcttgaca tccagctgac ccaatctcca tctccctgt ctgcatctgt aggagacaga 120
 gtcacatca cttgccgggc aagtcagggc attagaaatg atttaggctg gtatcagcag 180


```

aaaccagggga aagccccctaa ggcgcctgac tatgctgcat ccagtttgca aagtgggggtc 240
ccatcaaggt tcagcggcag tggatctggg acagaattca ctctcacaat cagcagcctg 300
cagcctgaag attttgcaac ttattactgt ctacagcata atacttacc tccgacgttc 360
ggccaagggga ccaaggtgga aatcaaacga actgtggctg caccatctgt cttcatcttc 420
ccgccatctg atgagcagtt gaaatctgga actgctagc g ttgtgtgcct gctgaataac 480
ttctatccca gagaggcaa agtacagtgg aaggtggata acgccctcca atcgggtaac 540
tcccaggaga gt 552

```

<210> 77
 <211> 552
 <212> DNA
 <213> Homo sapiens

```

<400> 77
actctcctgg gagttaccg attggag ggc gttatccacc ttccactgta ctttggcctc 60
tctgggatag aagttattca gcaggcacac aacgctagca gttccagatt tcaactgctc 120
atcagatggc gggaagatga agacagatgg tgcagccaca gttcgtttga tttccacctt 180
ggtcctctgg ccgaacgtcg gagggtaagt attatgctgt agacagtaat aagttgcaaa 240
atcttcaggc tgcaggctgc tgattgtgag agtgaattct gtcccagatc cactgccgct 300
gaaccttgat gggacccac tttgcaaact ggatgcagca tagatcaggc gcttaggggc 360
tttccctggg ttctgctgat accagcctaa atcatttcta atgccctgac ttgcccggca 420
agtgatggg actctgtctc ctacagatgc agacaggag gatggaga tt gggtcagctg 480
gatgtcaagc ttacacctgg cacctgggaa ccagagcagc aggagcccca ggagctgagc 540
ggggaccctc at 552

```

<210> 78
 <211> 184
 <212> PRT
 <213> Homo sapiens

```

<400> 78
Met Arg Val Pro Ala Gln Leu Leu Gly Leu Leu Leu Trp Phe Pro
1          5          10          15
Gly Ala Arg Cys Lys Leu Asp Ile Gln Leu Thr Gln Ser Pro Ser Ser
20          25          30
Leu Ser Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Arg Ala Ser
35          40          45
Gln Gly Ile Arg Asn Asp Leu Gly Trp Tyr Gln Gln Lys Pro Gly Lys
50          55          60
Ala Pro Lys Arg Leu Ile Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val
65          70          75          80
Pro Ser Arg Phe Ser Gly Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr
85          90          95
Ile Ser Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Leu Gln
100         105         110
His Asn Thr Tyr Pro Pro Thr Phe Gly Gln Gly Thr Lys Val Glu Ile
115         120         125
Lys Arg Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp
130         135         140
Glu Gln Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn
145         150         155         160
Phe Tyr Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu
165         170         175
Gln Ser Gly Asn Ser Gln Glu Ser
180

```

<210> 79
 <211> 31

<212> PRT
 <213> Homo sapiens

<400> 79
 Val Val Cys Leu Leu Asn Asn Phe Tyr Pro Arg Glu Ala Lys Val Gln
 1 5 10 15
 Trp Lys Val Asp Asn Ala Leu Gln Ser Gly Asn Ser Gln Glu Ser
 20 25 30

<210> 80
 <211> 2011
 <212> DNA
 <213> Homo sapiens

<400> 80
 atggaattgg ggctccgctg ggttttctct gttgctcttt taagaggtgt ccagtgtcag 60
 gtgcagctgg tggagtctgg gggaggcgtg gtccagcctg ggaggtccct gagactctcc 120
 tgtgtagcct ctggattcac cttcagtagc tatggcatgc actgggtccg ccagggtcca 180
 ggcaaggggc tggagtgggt gg cagttata tcatatgatg gaagtaataa atactatgca 240
 gactccgtga agggccgatt caccatctcc agagacaatt ccaagaacac gctgtatctg 300
 caaatgaaca gcctgagagt tgaggacacg gctgtgtatt actgtgctgag agatcacggg 360
 gggaggtacg tctacgacta cggtatggac gtctggggcc aagggaccac ggtcaccgtc 420
 tcctcagcct ccaccaaggg cccatcggtc tccccctgg cgccctgctc tagaagcacc 480
 tccgagagca cagccgccct gggctgcctg gtcaaggact acttccccga accggtgacg 540
 gtgtcgtgga actcaggcgc tctgaccagc ggcgtgcaca ccttcccagc tgtcctacag 600
 tcctcaggac tctactccct cagcagcgtg gtgaccgtgc cc tccagcaa ctccggcacc 660
 cagacctaca cctgcaacgt agatcacaag cccagcaaca ccaaggtgga caagacagtt 720
 ggtgagaggc cagctcaggg agggaggggt tctgctggaa gccaggctca gccctcctgc 780
 ctggacgcac cccggtctgt cagccccagc ccagggcagc aaggcaggcc ccattctgtc 840
 cctcaccggg aggcctctgc ccgccccact catgctcagg gagaggggtc tctggctttt 900
 tccaccaggc tccaggcagg cacaggctgg gtgcccctac cccaggccct tcacacacag 960
 gggcaggtgc ttggctcaga cctgccaaaa gccatatccg ggaggaccct gccctgacc 1020
 taagccgacc ccaaaggcca aactgtccac tccctcagct cggacacctt ctctcctccc 1 080
 agatccgagt aactcccaat cttctctctg cagagcgcaa atgttgtgtc gagtgtccac 1140
 cgtgtccagg taagccagcc caggcctcgc cctccagctc aaggcgggac aggtgtccct 1200
 gtagtagcct catccaggga caggccccag ctgggtgctg acacgtccac ctccatctct 1260
 tcctcagcac cacctgtggc aggaccgtca gtcttc ctct tcccccaaaa acccaaggac 1320
 accctcatga tctccggac ccctgaggtc acgtgcgtgg tgggtgacgt gagccacgaa 1380
 gaccccgagg tccagttcaa ctggtacgtg gacggcgtgg aggtgcataa tgccaagaca 1440
 aagccacggg aggagcagtt caacagcacg ttccgtgtgg tcagcgtcct caccgttgtg 1500
 caccaggact ggctgaacgg caaggagtag aagtgaagg tctccaacaa aggcctccca 1560
 gcccccatcg agaaaaccat ctccaaaacc aaaggtggga cccgcggggg atgagggcca 1620
 catggacaga ggccggctcg gccaccctc tgccctggga gtgaccgtg tgccaacctc 1680
 tgtccctaca gggcagcccc gagaaccaca ggtgtacacc ctgcccccat cccgggagga 1740
 gatgaccaag aaccagggtc gccctgacct cctgggtcaa ggcttctacc ccagcgacat 1800
 cgccgtggag tgggagagca atgggcagcc ggagaacaac tacaagacca cacctcccat 1860
 gctggactcc gacggctcct tcttctctta cagcaagctc accgtggaca agagcaggtg 1920
 gcagcagggg aacgtcttct catg ctccgt gatgcatgag gctctgcaca accactacac 1980
 gcagaagagc ctctccctgt ctccgggtaa a 2011

<210> 81
 <211> 2011
 <212> DNA
 <213> Homo sapiens

<400> 81
 tttaccggga gacagggaga ggctcttctg cgtgtagtgg ttgtgcagag cctcatgcat 60
 cacggagcat gagaagacgt tccccgtctg ccacctgtct ttgtccacgg tgagcttgct 120

```

gtagaggaag aaggagccgt cggagtcag catgggaggt gtggtcttgt agttgttctc 180
cggtgcccc ttgctctccc actccacggc gatgtcgtg gggtagaagc ctttgaccag 240
gcaggtcagg ctgacctggg tcttggtcat ctctcccgg gatgggggca gg gtgtacac 300
ctgtggttct cggggctgcc ctgtaggac agaggttggc acagcgggtca ctcccagggc 360
agaggggtggg ccgagccggc ctctgtccat gtggccctca taccgccgg gtccacctt 420
tggttttgga gatggttttc tcgatggggg ctgggaggcc tttgttgag accttgact 480
tgtactcctt gccgttcagc cagtcctggt gcacaacggg gaggacgtg accacacgga 540
acgtgctgtt gaactgctcc tcccgtggct ttgtcttggc attatgcacc tccacgccgt 600
ccacgtacca gttgaactgg acctcgggg ctctcgtggc caggtccacc accacgcacg 660
tgacctcagg ggtccgggag atcatgagg tgctcttggg ttttgggggg aagaggaaga 720
ctgacggctc tgccacaggt ggtgctgagg aagagatgga ggtggacgtg tcagcaccca 780
gctggggcct gtccctggat gcaggctact ctagggcacc tgtcccgcct tgagctggag 840
ggcgaggcct gggctggcct acctggggc ggtgggcact cgacacaaca tttgcgctct 900
gcagagagaa gattgggagt tactcggatc tgggaggaga gaaggtgtcc gagctgaggg 960
agtggacagt ttggcctttg gggtcggctt aggtcagggg cagggctctc ccgatatgg 1020
cttttggcag gtctgagcca agcacctgcc cctgtgtgtg aagggcctgg ggtaggggca 1080
cccagcctgt gcctgcctgg agcctggtgg aaaaagccag aagaccctct ccctgagcat 1140
gagtggggcg ggcagaggcc tccggg tgag gagacagatg gggcctgcct tgctgccctg 1200
ggctggggct gcacagccgg ggtgcgtcca ggcaggaggg ctgagcctgg cttccagcag 1260
acaccctccc tccctgagct ggctctcac caactgtctt gtccaccttg gtgttctgg 1320
gcttgtgatc tacgttgtag gtgtaggtct gggtgccgaa gttgctggag ggcacgggtca 1380
ccacgtgctc gagggagtag agtctgagg actgtaggac agctgggaag gtgtgcacgc 1440
cgctggtcag agcgctgag ttccacgaca ccgtcacccg ttcggggaag tagtccttga 1500
ccaggcagcc caggcggtc gtgctctcgg aggtgcttct agagcagggc gccaggggga 1560
agaccgatgg gcccttggtg gaggtgagg agacgggtgac cgtggtccct tggccccaga 1620
cgtccatacc gtagtcgtag acgtacctcc caccgtgatc tctcgcacag taatacacag 1680
ccgtgtcctc aactctcagg ctgttcattt gcagatacag cgtgttcttg gaattgtctc 1740
tggagatggt gaatcgggcc ttcacggagt ctgcatagta tttattactt ccatcatatg 1800
atataactgc cacc cactcc agcccccttgc ctggagcctg gcggaccag tgcatgccat 1860
agctactgaa ggtgaatcca gaggtacac aggagagtct cagggacctc ccaggctgga 1920
ccacgcctcc cccagactcc accagctgca cctgacactg gacacctctt aaaagagcaa 1980
cgaggaaaac ccagcggagc cccaattcca t 2011

```

<210> 82

<211> 252

<212> PRT

<213> Homo sapiens

<400> 82

```

Met Glu Leu Gly Leu Arg Trp Val Phe Leu Val Ala Leu Ala Leu Leu
 1          5          10          15
Arg Gly Val Gln Cys Gln Val Gln Leu Val Glu Ser Gly Gly Gly Val
 20          25          30
Val Gln Pro Gly Arg Ser Leu Arg Leu Ser Cys Val Ala Leu Ala Ser
 35          40          45
Gly Phe Thr Phe Ser Ser Tyr Gly Met His Trp Val Ala A rg Gly Gln
 50          55          60
Ala Pro Gly Lys Gly Leu Glu Trp Val Ala Leu Ala Val Ile Ser Tyr
 65          70          75          80
Asp Gly Ser Asn Lys Tyr Tyr Ala Asp Ser Val Lys Gly Arg Phe Thr
 85          90          95
Ile Ser Arg Asp Asn Ser Lys Asn Thr Leu Tyr Leu Gln Met Asn Ser
100          105          110
Leu Arg Val Glu Asp Thr Ala Val Tyr Tyr Cys Ala A rg Asp His Gly
115          120          125
Gly Arg Tyr Val Tyr Asp Tyr Gly Met Asp Val Trp Gly Gln Gly Thr
130          135          140
Thr Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser Val Phe Pro
145          150          155          160

```

Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala Ala Leu Gly
 165 170 175
 Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val Ser Trp Asn
 180 185 190
 Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala Val Leu Gln
 195 200 205
 Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val Pro Ser Ser
 210 215 220
 Asn Phe Gly Thr Gln Thr Tyr Thr Cys Asn Val Ala Ser Pro His Lys
 225 230 235 240
 Pro Ser Asn Thr Lys Val Ala Ser Pro Lys Thr Val
 245 250

<210> 83
 <211> 752
 <212> DNA
 <213> Homo sapiens

<400> 83
 atgaggggtcc ccgctcagct cctggggctc ctgctgctct ggttcccagg ttccagatgc 60
 gacatccaga tgaccaatc tccatcttcc gtgtctgcat ctataggaga cagagtctcc 120
 atcattgtgc gggcgagtca ggggtattag agctgggttag cctgggtatca gcagaaacca 180
 gggaaagccc ctacgctcct tatctatgct gcattccact tgcaactgtg ggtcccatca 240
 aggttcagcg gcagtggatc tgggacagat ttactcttca ccatcagcag cctgcagcct 300
 gaagattttg caacttactt ttgtcaacag gctaacagtt tcc cattcac ttctggccct 360
 gggaccaaaag tggatatcaa acgaactgtg gctgcaccat ctgtcttcat ctctccgcca 420
 tctgatgagc agttgaaatc tggaaactgt agcgttgtgt gcctgctgaa taacttctat 480
 cccagagagg ccaaagtaca gtggaagggt gataacgccc tccaatcggg taactcccag 540
 gagagtgtca cagagcagga cagcaaggac agcacctaca gcctcagcag caccctgacg 600
 ctgagcaaaag cagactacga gaaacacaaa gtctacgcct gcgaagtcac ccatcagggc 660
 ctgagctcgc ccgtcacaaa gagcttcaac aggggaagtg ggtagtcctc gactcagcgc 720
 ggcagtgttt ctggaagttg tcccctgagt gt 752

<210> 84
 <211> 752
 <212> DNA
 <213> Homo sapiens

<400> 84
 aactcaggg gacaacttcg agaaacactg cccgctcgag tccgggacta cccacttccc 60
 ctgttgaagc tctttgtgac gggcgagctc aggcctgat ggtgacttc gcaggcgtag 120
 actttgtgtt tctcgtagtc tgctttgctc agcgtcaggg tgctgctgag gc tgtaggtg 180
 ctgtccttgc tgtcctgctc tgtgacactc tccctgggagt taccgattg gagggcggtta 240
 tccaccttcc actgtacttt ggctctctcg ggatagaagt tattcagcag gcacacaacg 300
 ctagcagttc cagatttcaa ctgctcatca gatggcggga agatgaagac agatggtgca 360
 gccacagttc gtttgatata cactttggtc ccagggccga aagtgaatgg gaaactgtta 420
 gcctgttgac aaaagtaagt tgcaaaatct tcaggctgca ggctgctgat ggtgagagtg 480
 aaatctgtcc cagatccact gccgctgaac cttgatggga cccacggtg caaagtggat 540
 gcagcataga taaggagcgt aggggcttct cctgggttct gctgatacca ggctaaccag 600
 ctgctaatac cctgactcgc ccgacaagtg atgggagactc tgtctcctat agatgcagac 660
 acggaagatg gagattgggt catctggatg tcgcatctgg aacctgggaa ccagagcagc 720
 aggagcccca ggagctgagc ggggaccctc at 752

<210> 85
 <211> 234
 <212> PRT
 <213> Homo sapiens

<400> 85

```

Met Arg Val Pro Ala Gln Leu Leu Gly Leu Leu Leu Trp Phe Pro
 1           5           10           15
Gly Ser Arg Cys Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Val Ser
          20           25           30
Ala Ser Ile Gly Asp Arg Val Ser Ile Thr Cys Arg Ala Ser Gln Gly
          35           40           45
Ile Ser Ser Trp Leu Ala Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro
          50           55           60
Thr Leu Leu Ile Tyr Ala Ala Ser Thr Leu Gln Arg Gly Val Pro Ser
65           70           75           80
Arg Phe Ser Gly Ser Gly Ser Gly Thr Asp Phe Thr Leu Thr Ile Ser
          85           90           95
Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Phe Cys Gln Gln Ala Asn
          100          105          110
Ser Phe Pro Phe Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys Arg
          115          120          125
Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln
          130          135          140
Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr
145          150          155          160
Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser
          165          170          175
Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr
          180          185          190
Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys
          195          200          205
His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro
          210          215          220
Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
225          230

```

<210> 86

<211> 1990

<212> DNA

<213> Homo sapiens

<400> 86

```

atgaagcatc tgtggttctt ccttctcctg gtggcagctc ccagatgggt cctgtcccag 60
gtgcagctgc aggagtccgg cccag gactg gtgaagcctt cggagaccct gtccctcacc 120
tgcaactgtc ctggtgcctc catcagtaat tactactgga gctggatccg gcagccccca 180
gggaagggac tggagtggat tgggtatgtc tcttacagtg ggagtacgta ctacaacccc 240
tccctcaagg gtcgagtcac catgtcagta gacacgtcca agaaccagtt ctccctgaag 300
ctgagctctg tgaccgctgc ggacacggcc gtgtattact gtgcgagaga aaaactgggg 360
attggagact actggggcca gggaaccctg gtcaccgtct cctcagcctc caccaagggc 420
ccatcggtct tccccctggc gccctgctct agaagcacct ccgagagcac agccgcctg 480
ggctgcctgg tcaaggacta cttccccgaa ccggtgacgg tgtcg tggaa ctcaggcgct 540
ctgaccagcg gcgtgcacac cttcccagct gtccctacagt cctcaggact ctactccctc 600
agcagcgtgg tgaccgtgcc ctccagcaac ttccggcacc agacctacac ctgcaacgta 660
gatcacaagc ccagcaacac caaggtggac aagacagttg gtgagaggcc agctcaggga 720
gggaggggtg ctgtgggaag cca ggctcag cctcctgccc tggacgcacc ccggctgtgc 780
agccccagcc cagggcagca aggcaggccc catctgtctc ctcaccggga ggcctctgcc 840
cgccccactc atgtctcagg agagggtctt ctggcttttt ccaccaggct ccaggcaggc 900
acaggctggg tgccccctac ccaggccctt cacacacagg ggcaggtgct tggctcagac 960
ctgccccaaag ccatatccgg gaggaccctg cccctgacct aagccgaccc caaaggccaa 1020
actgtccact cctcagctc ggacaccttc tctcctccca gatccgagta actcccaatc 1080
ttctctctgc agagcgcaaa tgttgtgtcg agtgcccacc gtgccagggt aagccagccc 1140
aggcctcgcc ctccagctca aggcgggaca ggtgccctag agtagcctgc atccagggac 1200

```

```

aggccccagc tgggtgctga cacgtccacc tccatctctt cctcagcacc acctgtggca 1260
ggaccgtcag tcttctctct ccccccaaaa cccaaggaca cctcatgat ctcccgacc 1320
cctgaggtca cgtgcgtggt ggtggacgtg agccacgaag accccgaggt ccagttcaac 1380
tggtacgtgg acggc gtgga ggtgcataat gccaaagaaa agccacggga ggagcagttc 1440
aacagcacgt tccgtgtggt cagcgtcctc accgttgtgc accaggactg gctgaacggc 1500
aaggagtaca agtgcaaggt ctccaacaaa ggctctccag ccccatcga gaaaaccatc 1560
tccaaaacca aaggtgggac ccgcggggta tgagggccac atggacagag gccg gctcgg 1620
cccacctct gccctgggag tgaccgctgt gccaacctct gtccctacag ggcagccccg 1680
agaaccacag gtgtacaccc tgcccccatc ccgggaggag atgaccaaga accaggtcag 1740
cctgacctgc ctggtcaaag gcttctaccc cagcgacatc gccgtggagt gggagagcaa 1800
tgggcagccg gagaacaact acaagacca c acctcccatg ctggactccg acggtcctt 1860
cttctctctac agcaagctca ccgtggacaa gagcaggtgg cagcagggga acgtctctc 1920
atgctccgtg atgcatgagg ctctgcacaa ccactacacg cagaagagcc tctccctgtc 1980
tccgggtaaa
1990

```

<210> 87

<211> 1990

<212> DNA

<213> Homo sapiens

<400> 87

```

tttaccgga gacagggaga ggctcttctg cgtgtagtgg ttgtgcagag cctcatgcat 60
cacggagcat gagaagacgt tcccctgctg ccacctgctc ttgtccacgg tgagcttgct 120
gtagaggaag aaggagccgt cggagtccag catgggaggt gtggtcttgt agttg ttctc 180
cggctgcccc ttgctctccc actccacggc gatgtcgtg gggtagaagc ctttgaccag 240
gcaggtcagg ctgacctggg tcttggtcat ctctcccggt gatgggggca ggggtgtacac 300
ctgtggttct cggggctgcc ctgtagggac agaggttggc acagcgttca ctccagggc 360
agaggggtgg cggagccggc ctctgtccat gtg gccctca taccocggcg gtcccacctt 420
tggttttggg gatggttttc tcatggtggg ctgggaggcc tttgttgag accttgcat 480
tgtactcctt gccgttcagc cagtcctggt gcacaacggg gaggacgtg accacacgga 540
acgtgctgtt gaactgctcc tcccggtggt ttgtcttggc attatgcacc tccacgccgt 600
ccacgtacca gttgaactgg acctcggggt ctctgtggt cactccacc accacgcacg 660
tgacctcagg ggtccgggag atcatgagg gtgccttggg ttttgggggg aagaggaaga 720
ctgacggtcc tgccacaggt ggtgctgagg aagagatgga ggtggacgtg tcagcaccca 780
gctggggcct gtccctggat gcaggctact ctagggcacc tgtcccgct tga gctggag 840
ggcgaggcct gggctggctt acctgggcac ggtgggcact cgacacaaca tttgcgtct 900
gcagagagaa gatgggaggt tactcggatc tgggaggaga gaaggtgtcc gagctgagg 960
agtggacagt ttggcctttg gggtcggctt aggtcagggg cagggtcctc ccgatatg 1020
cttttggcag gtctgagcca agcacctgcc cctgtgtgtg aagggcctgg ggtaggggca 1080
cccagcctgt gcctgcctgg agcctggtgg aaaaagccag aagaccctct ccctgagcat 1140
gagtggggcg ggcagaggcc tccgggtgag gagacagatg gggcctgcct tgetgccctg 1200
ggctggggct gcacagccgg ggtgcgtcca ggcaggaggg ctgagcctgg ctccacagc 1260
acaccctccc tccctgagct ggctctcac caactgtctt gtccacctg gtgttgctg 1320
gcttgtgatc tacgttgag gtgtaggctt ggggtgccga gttgctggag ggcacgggtca 1380
ccacgtgctg gagggagtag agtcctgagg actgtaggac agctgggaag gtgtgcacgc 1440
cgctggtcag agcgctgag ttccacgaca ccgtcacccg ttcg gggaag tagtccttga 1500
ccaggcagcc cagggcggct gtgctctcgg aggtgcttct agagcagggc gccaggggga 1560
agaccgatgg gcccttggtg gaggtgagg agacgggtgac cagggttccc tggccccagt 1620
agtctccaat cccagtttt tctctcgcac agtaatacac ggccgtgtcc gcagcgggtca 1680
cagagctcag cttcaggga g aactggttct tggacgtgtc tactgacatg gtgactcgac 1740
ccttgaggga ggggttgtag tacgtactcc cactgtaaga gacataccca atccactcca 1800
gtoccttccc tgggggctgc cggatccagc tccagtagta attactgatg gaggaccag 1860
agacagtgca ggtgagggac agggctctcc aaggttccac cagtcctggg ccgactc ct 1920
gcagctgcac ctgggacagg acccatctgg gagctgccac caggagaagg aagaaccaca 1980
gatgcttcat
1990

```

<210> 88

<211> 241

<212> PRT

<213> Homo sapiens

<400> 88

```

Met Lys His Leu Trp Phe Phe Leu Leu Leu Val Ala Leu Ala Ala Pro
 1           5           10           15
Arg Trp Val Leu Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
      20           25           30
Val Lys Pro Ser Glu Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Ala
      35           40           45
Ser Ile Ser Asn Tyr Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys
      50           55           60
Gly Leu Glu Trp Ile Gly Tyr Val Ser Tyr Ser Gly Ser Thr Tyr Tyr
      65           70           75           80
Asn Pro Ser Leu Lys Gly Arg Val Thr Met Ser Val Ala Ser Pro Thr
      85           90           95
Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp
      100          105          110
Thr Ala Val Tyr Tyr Cys Ala Arg Glu Lys Leu Gly Ile Gly Asp Tyr
      115          120          125
Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly
      130          135          140
Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser
      145          150          155          160
Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val
      165          170          175
Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe
      180          185          190
Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val
      195          200          205
Thr Val Pro Ser Ser Asn Phe Gly Thr Gln Thr Tyr Thr Cys Asn Val
      210          215          220
Ala Ser Pro His Lys Pro Ser Asn Thr Lys Val Ala Ser Pro Lys Thr
      225          230          235          240
Val

```

<210> 89

<211> 702

<212> DNA

<213> Homo sapiens

<400> 89

```

atgaggctcc ccgctcagct cctggggctc ctgctgctct gggtcccagg tgccaggtgt 60
gacatccaga tgacccagtc tccatccctcc ctgtctgcat ctgtaggaga cagagtcacc 120
atcacttgcc gggcaagtca gggcattaaa aatgatttag gctggtatca gcagaaacca 180
gggaaagccc ctaagcgccct gatctatgct gcatccagtt tgcaaagtgg ggtcccatca 240
aggttcagcg gcagtggatc tgggacagaa ttactctca caatcagcag cctgcagcct 30 0
gaagattttg caacttatta ctgtctacag cataatagtt atccgtgcag ttttgccag 360
gggaccaagc tggagatcaa acgaactgtg gctgcacat ctgtcttcat cttcccgcca 420
tctgatgagc agttgaaatc tggaactgct agcgttgtgt gcctgctgaa taacttctat 480
cccagagagg ccaaagtaca gtggaagggt gataacgccc tccaatcggg taactcccag 540
gagagtgtca cagagcagga cagcaaggac agcacctaca gcctcagcag caccctgacg 600
ctgagcaaag cagactacga gaaacacaaa gtctacgcct gcgaagtcac ccatcagggc 660
ctgagctcgc ccgtcacaaa gagcttcaac aggggagagt gt 702

```

<210> 90

<211> 702

<212> DNA

<213> Homo sapiens

<400> 90

```

acactctccc ctgttgaagc tctttgtgac gggcgagctc aggccctgat gggtgacttc 60
gcaggcgtag actttgtgtt tctcgtagtc tgctttgctc agcgtcaggg tgctgctgag 120
gctgtaggtg ctgtccttgc tgtcctgctc tgtgacactc tcctgggagt tacccgattg 180
gagggcggtta tccaccttcc actgtacttt ggctctctctg ggatagaagt tattcagcag 240
gcacacaacg ctagcagttc cagatttcaa ctgctcatca gatggcgagg agatgaagac 300
agatgggtgca gccacagttc gtttgatctc cagcttggtc ccctggccaa aactgcacgg 360
ataactatta tgctgtagac agtaataagt tgcaaaatct tcaggctgca ggctgctgat 420
tgtgagagtg aattctgtcc cagatccact gccgctgaac cttgatggga cccacttttg 480
caaactggat gcagcataga tcaggcgctt aggggctttc cctggtttct gctgatacca 540
gcctaaatca tttttaatgc cctgacttgc ccggcaagtg atggtgactc tgtctcctac 600
agatgcagac agggaggatg gagactgg gt catctggatg tcacacctgg cacctgggaa 660
ccagagcagc aggagcccca ggagctgagc ggggagcctc at 702

```

<210> 91

<211> 234

<212> PRT

<213> Homo sapiens

<400> 91

```

Met Arg Leu Pro Ala Gln Leu Leu Gly Leu Leu Leu Leu Trp Phe Pro
 1          5          10          15
Gly Ala Arg Cys Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser
 20          25          30
Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly
 35          40          45
Ile Lys Asn Asp Leu Gly Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro
 50          55          60
Lys Arg Leu Ile Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser
 65          70          75          80
Arg Phe Ser Gly Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser
 85          90          95
Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Leu Gln His Asn
100          105          110
Ser Tyr Pro Cys Ser Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Arg
115          120          125
Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln
130          135          140
Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr
145          150          155          160
Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser
165          170          175
Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr
180          185          190
Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys
195          200          205
His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro
210          215          220
Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
225          230

```

<210> 92

<211> 1996

<212> DNA

<213> Homo sapiens

<400> 92

```

atgaaacatc tgtggttctt cctcctgctg gtggcagctc ccagatgggt cctgtcccag 60
gtgcagctgc aggagtgcggg cccaggactg gtgaagcctt cacagaccct gtccctcacc 120
tgactgtctc ctgggtgcctc catcagcagt ggtgcttact actg gagttg gatccgccag 180
caccagggga agggcctgga gtggattggg tacatctata agagtgcagc ctccctactac 240
aaccgtccc tcaagagtgc attacccta tcagtagaca cgtctaagaa ccagttctcc 300
ctgaacctga tctctgtgac tgccgcggac acggccgtgt attattgtgc gagagataaa 360
ctggggatcg cggactactg gg gccaggga accctgggtca cegtctctc agcctccacc 420
aagggcccat cgtctctccc cctggcgccc tgctctagaa gcacctccga gagcacagcc 480
gccctgggct gcctgggtcaa ggactacttc cccgaaccgg tgacggtgtc gtggaactca 540
ggcgctctga ccagcggcgt gcacaccttc ccagctgtcc tacagtctc aggaactctac 600
tccctcagca gcgtggtgac cgtgccctcc agcaacttcg gcaccagac ctacacctgc 660
aacgtagatc acaagcccag caacaccaag gtggacaaga cagttggtga gaggccagct 720
caggagggga ggggtgtctgc tgggaagccag gctcagccct cctgctgga cgcaccccg 780
ctgtgcagcc ccagcccagg gcagcaaggc agggcccatc tg tctcctca cccggaggcc 840
tctgccccc ccactcatgc tcaggagag ggtctctctg cttttccac caggtcccag 900
gcaggcacag gctgggtgcc cctaccccag gcccttcaca cacaggggca ggtgcttggc 960
tcagacctgc caaaagccat atccgggagg accctgcccc tgacctaacg cgaccccaaa 1020
ggccaaactg tccactccct cagctcggac acctctctc ctcccagatc cgagtaactc 1080
ccaatcttct ctctgcagag cgcaaagtgt gtgtcagagt cccaccgtgc ccaggtaagc 1140
cagcccaggc ctgcctctcc agctcaaggc gggacaggtg cctagagta gctgcatcc 1200
agggacaggc ccagctggg tgctgacacg tccacctcca tctctctc agcaccacc t 1260
gtggcaggac cgtcagttct cctctctccc ccaaaaccca aggacacct catgatctcc 1320
cggacccctg aggtcacgtg cgtgggtggg gacgtgagcc acgaagacc cgaggtccag 1380
ttcaactggg acgtggacgg cgtggagggt cataatgcc agacaaagcc acgggaggag 1440
cagttcaaca gcagttccg tgtggtcagc gtc ctcaccg ttgtgcacca ggactggctg 1500
aacggcaagg agtacaagt caaggtctcc aacaaaggcc tcccagcccc catcgagaaa 1560
acctctcca aaaccaaagg tgggaccgcg ggggtatgag ggccacatgg acagggccg 1620
gctcgcccca cctctgccc tgggagtgc cgtgtgcca acctctgtcc ctacagggc 1680
gccccgagaa ccacaggtgt acacctgccc cccatcccgg gaggagatga ccaagaacca 1740
ggtcagcctg acctgcctgg tcaaaggct ctaccccagc gacatcgccg tggagtggga 1800
gagcaatggg cagccggaga acaactacaa gaccacacct cccatgctgg actccgacgg 1860
ctccttcttc ctctacagca agctcaccgt ggacaagagc aggtggc agc aggggaacgt 1920
cttctcatgc tccgtgatgc atgaggctct gcacaaccac tacacgcaga agagcctctc 1980
cctgtctccg ggtaaa 1996

```

<210> 93

<211> 1996

<212> DNA

<213> Homo sapiens

<400> 93

```

tttacccgga gacagggaga ggctcttctg c gtgtagtgg ttgtgcagag cctcatgcat 60
cacggagcat gagaagacgt tcccctgctg ccacctgtc ttgtccacgg tgagcttgct 120
gtagaggaag aaggagccgt cggagtccag catgggaggt gtggtcttgt agttgttctc 180
cggctgcccc ttgctctccc actccacggc gatgtcgtg ggtagaagc ctttgaccag 240
gcaggtcagg ctgacctggt tcttggtcat ctctcccg gatgggggca ggggtgtacac 300
ctgtggttct cggggctgcc ctgtagggac agagggtggc acagcgggtc ctcccagggc 360
agagggtggg ccgagccggc ctctgtccat gtggccctca taccgcggg gtcccacctt 420
tggttttggg gatgggtttc tcgatggggg ctgggaggcc ttgttgagg ac cttgact 480
tgtactcctt gccgttcagc cagtctggt gcacaacggt gaggacgctg accacagga 540
acgtgctgtt gaactgctcc tcccgtggc ttgtcttggc attatgcacc tccacgccgt 600
ccacgtacca gttgaactgg acctcggggt cttcgtggc caggtccacc accacgcag 660
tgacctcagg ggtccgggag atcatgaggg tgtccttggg ttttggggg aagaggaaga 720
ctgacgggtc tgccacaggt ggtgctgagg aagagatgga ggtggacgtg tcagcaccca 780
gctggggcct gtccctggat gcaggctact ctagggcacc tgtccgcct tgagctggag 840
ggcgaggcct gggctggctt acctgggcac ggtgggcaact cgacacaaca tttgcgtctc 900
gcagagagaa gattgggagt tactcggatc tgggaggaga gaaggtgtcc gagctgagg 960
agtggacagt ttggcctttg gggtcggctt aggtcagggg cagggtcctc ccgatatgg 1020

```

```

cttttggcag gtctgagcca agcacctgcc cctgtgtgtg aagggcctgg ggtaggggca 1080
cccagcctgt gcctgcctgg agcctggtgg aaaaagccag aagaccctc t ccctgagcat 1140
gagtggggcg ggcagaggcc tccgggtgag gagacagatg gggcctgcct tgctgccctg 1200
ggctggggct gcacagccgg ggtgcgtcca ggcaggaggg ctgagcctgg cttccagcag 1260
acaccctccc tccctgagct ggctctcac caactgtctt gtccaccttg gtgttgctgg 1320
gcttgatgatc tacgttgtag gtg taggtct ggggtccgaa gttgctggag ggcacggtca 1380
ccacgctgct gagggagtag agtcctgagg actgtaggac agctgggaag gtgtgcacgc 1440
cgctggtcag agcgctgag ttccacgaca ccgtcaccgg ttcggggaag tagtccttga 1500
ccaggcagcc cagggcggct gtgctctcgg aggtgcttct agagcagggc gccaggggga 15 60
agaccgatgg gcccttggtg gaggtgagg agacggtgac cagggttccc tggccccagt 1620
agtccgcat cccagttta tctctcgac aataatacac ggccgtgtcc gcggcagtca 1680
cagagatcag gttcaggag aactggttct tagacgtgtc tactgatagg gtaagtcgac 1740
tcttgaggga cgggttgtag taggaggtct cactctt ata gatgtacca atccactcca 1800
ggccttccc tgggtgctgg cggatccaac tccagtagta agcaccactg ctgatggagg 1860
caccagagac agtgcagggt agggacagg tctgtgaagg cttcaccagt cctgggcccg 1920
actcctgcag ctgcacctgg gacaggacct atctgggagc tgccaccagc aggaggaaga 1980
accacagatg tttcat 1996

```

<210> 94

<211> 243

<212> PRT

<213> Homo sapiens

<400> 94

```

Met Lys His Leu Trp Phe Phe Leu Leu Leu Val Ala Leu Ala Ala Pro
 1          5          10          15
Arg Trp Val Leu Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
 20          25          30
Val Lys Pro Ser Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Ala
 35          40          45
Ser Ile Ser Ser Gly Ala Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro
 50          55          60
Gly Lys Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Lys Ser Glu Thr Ser
 65          70          75          80
Tyr Tyr Asn Pro Ser Leu Lys Ser Arg Leu Thr Leu Ser Val Ala Ser
 85          90          95
Pro Thr Ser Lys Asn Gln Phe Ser Leu Asn Leu Ile Ser Val Thr Ala
100          105          110
Ala Asp Thr Ala Val Tyr Tyr Cys Ala Arg Asp Lys Leu Gly Ile Ala
115          120          125
Asp Tyr Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr
130          135          140
Lys Gly Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser
145          150          155          160
Glu Ser Thr Ala Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu
165          170          175
Pro Val Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His
180          185          190
Thr Phe Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser
195          200          205
Val Val Thr Val Pro Ser Ser Asn Phe Gly Thr Gln Thr Tyr Thr Cys
210          215          220
Asn Val Ala Ser Pro His Lys Pro Ser Asn Thr Lys Val Ala Ser Pro
225          230          235          240
Lys Thr Val

```

<210> 95

<211> 702
 <212> DNA
 <213> Homo sapiens

<400> 95
 atgaggggtcc ccgctcagct cctgggggtc ctgctgctct gggtcccagg cgccagggtgt 60
 gacatccaga tgacccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 120
 atcacttgcc gggcaagtca ggaca ttaga aatgatttag gctgggtatca gcagaaacca 180
 gggaaagccc ctaagcgctt gatctatgct gcatccaatt tgcaaagtgg ggtcccatca 240
 aggttcagcg gcagtggatc tgggacagaa ttactctca caatcagcag cctgcagcct 300
 gaagattttg caacttatta ctgtctacag cataatagct accctccac tttcggcgga 360
 gggaccaagg tggaaatcaa acgaactgtg gctgcacat ctgtcttcat cttcccgcca 420
 tctgatgagc agttgaaatc tggaaactgt agcgttgtgt gcctgctgaa taacttctat 480
 cccagagagg ccaaagtaca gtggaagggt gataacgccc tccaatcggg taactcccag 540
 gagagtgtca cagagcagga cagcaaggac agcacctaca gcctc agcag caccctgacg 600
 ctgagcaaag cagactacga gaaacacaaa gtctacgcct gcgaagtcac ccacagggc 660
 ctgagctcgc ccgtcacaaa gagcttcaac aggggagagt gt 702

<210> 96
 <211> 702
 <212> DNA
 <213> Homo sapiens

<400> 96
 acactctccc ctgttgaagc tctttgtgac ggg cgagctc aggcctgat ggggtgacttc 60
 gcaggcgtag actttgtgtt tctcgtagtc tgctttgtc agcgtcaggg tgctgctgag 120
 gctgtaggtg tctccttgc tgtcctgctc tgtgacactc tcctgggagt tacccgattg 180
 gagggcggtta tccaccttcc actgtacttt ggctctctg ggatagaagt tattcagcag 240
 gcacacaacg ct agcagttc cagatttcaa gtgctcatca gatggcgga agatgaagac 300
 agatggtgca gccacagttc gtttgatttc caccttggtc cctccgccga aagtgggagg 360
 gtagctatta tgctgtagac agtaataagt tgcaaaatct tcaggctgca ggctgctgat 420
 tgtgagagtg aattctgtcc cagatccact gccgctgaac cttgatggga cccc actttg 480
 caaattggat gcagcataga tcaggcgctt aggggctttc cctggtttct gctgatacca 540
 gcctaaatca tttctaagt cctgacttgc ccggcaagtg atggtgactc tgtctctac 600
 agatgcagac agggaggatg gagactgggt catctggatg tcacacctgg cgctgggaa 660
 ccagagcagc aggagcccca ggagctgagc gg ggacctc at 702

<210> 97
 <211> 234
 <212> PRT
 <213> Homo sapiens

<400> 97
 Met Arg Val Pro Ala Gln Leu Leu Gly Leu Leu Leu Trp Phe Pro
 1 5 10 15
 Gly Ala Arg Cys Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser
 20 25 30
 Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Asp
 35 40 45
 Ile Arg Asn Asp Leu Gly Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro
 50 55 60
 Lys Arg Leu Ile Tyr Ala Ser Asn Leu Gln Ser Gly Val Pro Ser
 65 70 75 80
 Arg Phe Ser Gly Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser
 85 90 95
 Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Leu Gln His Asn
 100 105 110
 Ser Tyr Pro Thr Phe Gly Gly Gly Thr Lys Val Glu Ile Lys Arg
 115 120 125

Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln
 130 135 140
 Leu Lys Ser Gly Thr Ala S Ser Val Val Cys Leu Leu Asn Asn Phe Tyr
 145 150 155 160
 Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser
 165 170 175
 Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr
 180 185 190
 Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys
 195 200 205
 His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro
 210 215 220
 Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
 225 230

<210> 98
 <211> 1990
 <212> DNA
 <213> Homo sapiens

<400> 98
 atgaaacacc tgtggttctt ccttctcctg gtggcagctc ccagatgggt cctgtcccag 60
 gtgcagctgc aggagtcggg cccaggactg gtgaagcctt cggagaccct gtccctcacc 120
 tgcactgtct ctggtgtctc catcagtaat tactactgga gctggatccg gcagtcacca 180
 gggaagggac tggagtggat tggatataat tattacagtg ggagtccct a ttacaacccc 240
 tccctcaaga gtcgagtcac tatatctgca gacacgtcca agaaccaatt ctccctgaag 300
 ctgagctctg tgaccgctgc ggacacggcc atttattact gtgagagaga aaaactgggg 360
 attggagact actggggcca gggaaccctg gtcaccgtct cctcagcctc caccaagggc 420
 ccatcggtct tccccctggc gccctgc tct agaagcacct ccgagagcac agccgccctg 480
 ggctgcctgg tcaaggacta cttccccgaa ccggtgacgg tctcgtggaa ctcaggcgct 540
 ctgaccagcg gcgtgcacac cttcccagct gtccctacagt cctcaggact ctactccctc 600
 agcagcgtgg tgaccgtgcc ctccagcaac ttccggcacc agacctacac ctgcaacgta 660
 gatcaacaag ccagcaacac caaggtggag aagacagttg gtgagaggcc agctcagga 720
 gggaggggtg ctgctggaag ccaggctcag cctcctgcc tggacgcacc ccggtgtg 780
 agccccagcc cagggcagca aggcaggccc catctgtctc ctcacccgga ggctctgcc 840
 cgccccactc atgctcaggg agagggtctt ctggcttttt ccaccag gct ccaggcaggc 900
 acaggctggg tgccccctacc ccaggccctt cacacacagg ggcagggtgct tggctcagac 960
 ctgccccaaag ccatatccgg gaggaccctg cccctgacct aagccgacc caaaggccaa 1020
 actgtccact cctcagctc ggacaccttc tctcctccca gatccgagta actcccaatc 1080
 ttctctctgc agagcgcaaa tgt tgtgtcg agtgcccacc gtgcccagggt aagccagccc 1140
 aggcctcgcc ctccagctca aggcgggaca ggtgccctag agtagcctgc atccagggac 1200
 aggccccagc tgggtgtgta cacgtccacc tccatctctt cctcagcacc acctgtggca 1260
 ggaccgtcag tcttctctt ccccccaaaa cccaaggaca ccctcatgat ctcccggacc 13 20
 cctgagggtc cgtgcgtggg ggtggacgtg agccacgaag accccgagggt ccagttcaac 1380
 tgggtacgtg acggcgtgga ggtgcataat gccaaagaaa agccacggga ggagcagttc 1440
 aacagcacgt tccgtgtggg cagcgtcctc accgttgtgc accaggactg gctgaacggc 1500
 aaggagtaca agtgcaagggt ctccaacaaa ggcctcc cag ccccatcga gaaaaccatc 1560
 tccaaaacca aaggtgggac ccgcggggta tgagggccac atggacagag gccggctcgg 1620
 cccaccctct gccctgggag tgaccgctgt gccaaacctt gtccctacag ggcagccccg 1680
 agaaccacag gtgtacaccc tgcccccatc ccgggaggag atgaccaaga accagggtcag 1740
 cctgacctgc ctggtcaaaag gcttctaccc cagcgacatc gccgtggagt gggagagcaa 1800
 tgggcagccg gagaacaact acaagaccac acctcccatg ctggactccg acggctcctt 1860
 ctctctctac agcaagctca ccgtggacaa gagcagggtg cagcagggga acgtcttctc 1920
 atgctccgtg atgcatgagg ctctgcacaa ccactacacg cagaagagcc tctccctgtc 1980
 tccgggtaaa 1990

<210> 99
 <211> 1990

<212> DNA

<213> Homo sapiens

<400> 99

```

tttaccgga gacagggaga ggctcttctg cgtgtagtgg ttgtgcagag cctcatgcat 60
cacggagcat gagaagacgt tccctgctg ccacctg ctc ttgtccacgg tgagcttgct 120
gtagaggaag aaggagccgt cggagtcag catgggaggt gtggtcttgt agttgttctc 180
cggctgcccc ttgctctccc actccacggc gatgtcgtg gggtagaagc ctttgaccag 240
gcaggtcagg ctgacctggt tcttggtcat ctctcccgg gatgggggca ggggtgtcac 300
ctgtggttct cgggg ctgcc ctgtagggac agaggttggc acagcggta cttccagggc 360
agaggggtggg ccgagccggc ctctgtccat gtggccctca taccgcggg gtccacactt 420
tggttttgga gatggttttc tcgatggggg ctgggaggcc tttgttgagg accttgca 480
tgtactcctt gccgttcagc cagtcctggt gcacaacggg gaggacgctg accacac gga 540
acgtgctgtt gaactgctcc tcccggtggc ttgtcttggc attatgcacc tccacgccgt 600
ccacgtacca gttgaactgg acctcggggg cttcgtggc cagctccacc accacgcacg 660
tgacctcagg ggtccgggag atcatgaggg tgcctctggg ttttgggggg aagaggaaga 720
ctgacgggtcc tgccacaggt ggtgctgagg aagag atgga ggtggacgtg tcagcaccca 780
gctggggcct gtccctggat gcaggctact ctagggcacc tgtccgcct tgagctggag 840
ggcgaggcct gggctggcct acctgggcac ggtgggcact cgacacaaca tttgcgctct 900
gcagagagaa gattgggagt tactcggatc tgggaggaga gaaggtgtcc gagctgaggg 960
agtggacagt ttggcctttg ggtcggcctt aggtcagggg cagggtcctc ccggatatgg 1020
cttttggcag gtctgagcca agcacctgcc cctgtgtgtg aagggcctgg ggtaggggca 1080
cccagcctgt gcctgcctgg agcctggtgg aaaaagccag aagaccctct ccctgagcat 1140
gagtggggcg ggcagaggcc tccgggtgag gagacagatg gggcctgcct tg ctgccctg 1200
ggctggggct gcacagccgg ggtgcgtcca ggcaggaggg ctgagcctgg cttccagcag 1260
acaccctccc tccctgagct ggctctcac caactgtctt gtccaccttg gtgttgctgg 1320
gcttgtgatc tacgttgtag gtgtaggtct gggtgccgaa gttgctggag ggcacggta 1380
ccacgtgctg gaggagtag agtcctg agg actgtaggac agctgggaag gtgtgcacgc 1440
cgctggtcag agcgctgag ttccacgaca ccgtcaccgg ttcggggaag tagtccttga 1500
ccaggcagcc cagggcggct gtgctctcgg aggtgcttct agagcagggc gccaggggga 1560
agaccgatgg gcccttggtg gaggtgagg agacggtgac caggggtccc tggccccagt 1620
agtctccaat cccagtttt tctctcgac agtaataaat ggccgtgtcc gcagcggta 1680
cagagctcag cttcaggag aattggttct tggacgtgtc tgcagatata gtgactcgac 1740
tcttgaggga ggggttgtaa tagggactcc cactgtaata gatatatcca atccactcca 1800
gtcccttccc tggggactgc cggatccagc tccagtagta attactgatg gagacaccag 1860
agacagtgca ggtgagggac agggctctcc aaggcttcac cagtcctggg cccgactcct 1920
gcagctgcac ctgggacagg acccatctgg gagctgccac caggagaagg aagaaccaca 1980
ggtgtttcat                                     1990

```

<210> 100

<211> 239

<212> PRT

<213> Homo sapiens

<400> 100

```

Met Lys His Leu Trp Phe Phe Leu Leu Leu Val Ala Leu Ala Ala Pro
 1          5          10          15
Arg Trp Val Leu Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
 20          25          30
Val Lys Pro Ser Glu Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Val
 35          40          45
Ser Ile Ser Asn Tyr Tyr Trp Ser Trp Ile Arg Gln Ser Pro Gly Lys
 50          55          60
Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Tyr Ser Gly Ser Pro Tyr Tyr
 65          70          75          80
Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Ala Asp Thr Ser Lys
 85          90          95
Asn Gln Phe Ser Leu Lys Leu Ser Ser Val Thr Ala Ala Asp Thr Ala
100          105          110

```

```

Ile Tyr Tyr Cys Ala Arg Glu Lys Leu Gly Ile Gly Asp Tyr Trp Gly
      115                      120                      125
Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser
      130                      135                      140
Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala
145                      150                      155                      160
Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val
      165                      170                      175
Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala
      180                      185                      190
Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val
      195                      200                      205
Pro Ser Ser Asn Phe Gly Thr Gln Thr Tyr Thr Cys Asn Val Ala Ser
      210                      215                      220
Pro His Lys Pro Ser Asn Thr Lys Val Ala Ser Pro Lys Thr Val
225                      230                      235

```

```

<210> 101
<211> 702
<212> DNA
<213> Homo sapiens

```

```

<400> 101
atgaggggtcc ccgctcagct cctgggggtcc ctgctgctct ggttcccagg tgccagggtgt 60
gacatccaga tgaccagtc tccatcctcc ctgtctgcat ctgtcggaga cagagtcacc 120
atcacttgcc gggcaagtca gggcattaga aatgatttag gctggtatca gcagaaacca 180
gggaaagccc ctaagcgctt gatctatgct gcatccagtt tgcaaagtgg ggtccc atca 240
aggttcagcg gcagtggatc tgggacagaa ttcactctca caatcagcag cctgcagcct 300
gaagattttg caacttatta ctgtctacag cataatagtt accctccac tttcggccct 360
gggaccaagg tggatatcaa acgaactgtg gctgcaccat ctgtcttcat cttcccgcga 420
tctgatgagc agttgaaatc tggaaactgt agcg ttgtgt gcctgctgaa taacttctat 480
cccagagagg ccaaagtaca gtggaagggt gataacgccc tccaatcggg taactcccag 540
gagagtgtca cagagcagga cagcaaggac agcacctaca gcctcagcag caccctgacg 600
ctgagcaaag cagactacga gaaacacaaa gtctacgcct gcgaagtcac ccatcagggc 660
ctgagctcgc ccgtcacaaa gagcttcaac aggggagagt gt 702

```

```

<210> 102
<211> 702
<212> DNA
<213> Homo sapiens

```

```

<400> 102
acactctccc ctgttgaagc tctttgtgac gggcgagctc aggcctgat ggggtgacttc 60
gcaggcgtag actttgtgtt tctcgtagtc tgctttgctc agcgtcaggg tgctgctgag 120
gctgtaggtg ctgtccttgc tgtcctgctc tgtgacactc tcctgggagt tacccgattg 180
gagggcggtt tccaccttcc actgtacttt ggctctcttg ggatagaagt tattcagcag 240
gcacacaacg ctagcagttc cagatttcaa ctgctcatca gatggcggga agatgaagac 300
agatggtgca gccacagttc gtttgatatc caccttggtc c cagggccga aagtgggagg 360
gtaactatta tgctgtagac agtaataagt tgcaaaatct tcaggctgca ggctgctgat 420
tgtgagagtg aattctgtcc cagatccact gccgctgaac cttgatggga cccactttg 480
caaactggat gcagcataga tcaggcgctt aggggctttc cctggtttct gctgatacca 540
gcctaaatca tttctaagtc cctgacttgc ccggcaagtg atggtgactc tgtctccgac 600
agatgcagac agggaggatg gagactgggt catctggatg tcacacctgg cacctgggaa 660
ccagagcagc aggagcccca ggagctgagc ggggaccctc at 702

```

```

<210> 103
<211> 234
<212> PRT

```

<213> Homo sapiens

<400> 103

```

Met Arg Val Pro Ala Gln Leu Leu Gly Leu Leu Leu Leu Trp Phe Pro
 1           5           10           15
Gly Ala Arg Cys Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser
           20           25           30
Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly
           35           40           45
Ile Arg Asn Asp Leu Gly Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro
           50           55           60
Lys Arg Leu Ile Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser
           65           70           75           80
Arg Phe Ser Gly Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser
           85           90           95
Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Leu Gln His Asn
           100          105          110
Ser Tyr Pro Pro Thr Phe Gly Pro Gly Thr Lys Val Asp Ile Lys Arg
           115          120          125
Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln
           130          135          140
Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr
           145          150          155          160
Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser
           165          170          175
Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr
           180          185          190
Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys
           195          200          205
His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro
           210          215          220
Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
           225          230

```

<210> 104

<211> 1990

<212> DNA

<213> Homo sapiens

<400> 104

```

atgaaacatc tgtggttctt ctttctcctg gtggcagctc ccagatgggt cctgtcccag 60
gtgcagctgc aggagtcggg cccaggactg gt gaagcctt cggagaccct gtccctcacc 120
tgcaactgtc ctggtggctc catcagtcgt tactactgga gctggatccg gcagccccc 180
gggaagggac tggagtggat tgggtatgtc tcttacagtg ggagcaccta ctacaacccc 240
tccctcaaga gtcagtcac catatcagta gacacgtcca agaaccagtt ctccctgaag 300
ctgagctctg tgaccgctgc ggacacggcc gtgtattact gtgagagaga taaactgggg 360
attggagact actggggcca gggaaccctg gtcaccgtct cctcagcctc caccaagggc 420
ccatcggtct tccccctggc gccctgctct agaagcacct ccgagagcac agccgcccctg 480
ggctgcctgg tcaaggacta cttccccgaa ccggtgacgg tgtcgtggaa ct caggcgct 540
ctgaccagcg gcgtgcacac cttcccagct gtccctacagt cctcaggact ctactccctc 600
agcagcgtgg tgaccgtgcc ctccagcaac ttccggcacc agacctacac ctgcaacgta 660
gatcacaagc ccagcaaacac caaggctggc aagacagttg gtgagaggcc agctcaggga 720
gggaggggtg ctgctggaag ccaggctcag cctcctgcc tggacgcacc ccggctgtgc 780
agccccagcc cagggcagca aggcaggccc catctgtctc ctcaccggga ggcctctgcc 840
cgccccactc atgctcaggg agagggtctt ctggcttttt ccaccaggct ccaggcaggc 900
acaggctggg tgcccctacc ccaggccctt cacacacagg ggcaggtgct tggctcagac 960
ctgccaagg ccatatccgg gaggaccctg cccctgacct aagccgacct caaaggccaa 1020
actgtccact ccctcagctc ggacaccttc tctcctccca gatccgagta actcccaatc 1080

```

```

ttctctctgc agagcgcaaa tgttgtgtcg agtgcccacc gtgcccaggt aagccagccc 1140
aggcctcgcc ctccagctca aggcggggaca ggtgccctag agtagcct gc atccagggac 1200
aggccccagc tgggtgctga cacgtccacc tccatctctt cctcagcacc acctgtggca 1260
ggaccgtcag tcttctctt cccccaaaaa cccaaggaca ccctcatgat ctcccgacc 1320
cctgaggtca cgtgctgtgt ggtggacgtg agccacgaag accccgaggt ccagttcaac 1380
tgggtacgtg acggcgtgga gg tgcataat gccaaagacaa agccacggga ggagcagttc 1440
aacagcacgt tccgtgtgtt cagcgtcctc accgttgtgc accaggactg gctgaacggc 1500
aaggagtaca agtgcaaggt ctccaacaaa ggccctccag ccccatcga gaaaaccatc 1560
tccaaaacca aaggtgggac ccgcggggta tgaggggccac atggacagag gccgggtcgg 1 620
cccaccctct gccctgggag tgaccgtgtt gccaaacctt gtccctacag ggcagccccg 1680
agaaccacag gtgtacaccc tgccccatc ccgggaggag atgaccaaga accagggtcag 1740
cctgacctgc ctggtcaaag gcttctaccc cagcgacatc gccgtggagt gggagagcaa 1800
tgggcagccg gagaacaact acaagaccac acctcc catg ctggactccg acggctcctt 1860
cttctctctac agcaagctca ccgtggacaa gagcaggtgg cagcagggga acgtcttctc 1920
atgctccgtg atgcatgagg ctctgcacaa ccactacacg cagaagagcc tctccctgtc 1980
tccgggtaaa                                     1990

```

<210> 105

<211> 1990

<212> DNA

<213> Homo sapiens

<400> 105

```

tttacccgga gacagggaga ggctcttctg cgtgtagtgg ttgtgcagag cctcatgcat 60
cacggagcat gagaagacgt tcccctgctg ccacctgctc ttgtccacgg tgagcttgct 120
gtagaggaag aaggagccgt cggagtccag catgggaggt gtggtcttgt agttgttctc 180
cgggtgcca ttgctctccc actccacggc gatgtcgctg gggtagaagc ctttgaccag 240
gcaggtcagg ctgacctggg tcttggctat ctctcccg gatgggggca ggggtgtacac 300
ctgtggttct cggggctgcc ctgtagggac agaggttggc acagcgggtca ctccagggc 360
agaggggtgg ccgagccggc ctctgtccat gtggccctc a taccgccgg gtcccacctt 420
tggtttttga gatggttttc tcgatggggg ctgggaggcc tttgttgagg accttgact 480
tgtactcctt gccgttcagc cagtctggtg gcacaacggt gaggacgctg accacacgga 540
acgtgtcgtt gaactgctcc tcccgtgggt ttgtcttggc attatgcacc tccacgccgt 600
ccacgtacca gttgaac tgg acctcgggggt ctctgtggct cacgtccacc accacgcacg 660
tgacctcagg ggtccgggag atcatgaggg ttgccttggg ttttgggggg aagaggaaga 720
ctgacgggtc tgccacaggt ggtgctgagg aagagatgga ggtggacgtg tcagcaccca 780
gctggggcct gtccctggat gcaggctact ctagggcacc tgtcccgcct tgagctgga g 840
ggcgaggcct gggctggctt acctgggcac ggtgggcact cgacacaaca tttgcgctct 900
gcagagagaa gattgggagt tactcggatc tgggaggaga gaaggtgtcc gagctgaggg 960
agtggacagt ttggcctttg gggtcggctt aggtcagggg cagggtctc ccgatatgg 1020
cttttggcag gtctgagcca agcacctgcc cctgtg tgtg aagggcctgg ggtaggggca 1080
cccagcctgt gcctgcctgg agcctggtgg aaaaagccag aagaccctct ccttgagcat 1140
gagtgggggc ggacagggcc tccgggtgag gagacagatg gggcctgcct tgctgccctg 1200
ggctggggct gcacagccgg ggtgcgtcca ggcaggaggg ctgagcctgg ctccagcag 1260
acacctccc tccctgagct ggctctcac caactgtctt gtccacctg gtgttgtctg 1320
gcttgtgatc tacgttgccag gtgtaggtct ggggtgccaa gttgctggag ggcacggtca 1380
ccacgtgctg gagggagtag agtctgagg actgtaggac agctgggaag gtgtgcacgc 1440
cgctggtcag agcgcctgag ttccacgaca ccgtcaccgg ttcggggaag tagtcttga 1500
ccaggcagcc caggcgggct gtgctctcgg aggtgcttct agagcagggc gccaggggga 1560
agaccgatgg gcccttggtg gaggtgagg agacggtgac cagggttccc tggccccagt 1620
agtctccaat cccagttta tctctgcac agtaatacac ggccgtgtcc gcagcgggtca 1680
cagagctcag cttcagggag aact ggttct tggacgtgtc tactgatatg gtgactcgac 1740
tcttgaggga ggggtttag taggtgctcc cactgtaaga gacataccca atccactcca 1800
gtcccttccc tggggctgc cggatccagc tccagtagta acgactgatg gagccaccag 1860
agacagtgca ggtgagggac agggctctcc aaggcttcac cagtctggg cccgactcct 192 0
gcagctgcac ctgggacagg acccatctgg gagctgccac caggagaagg aagaaccaca 1980
gatgtttcat                                     1990

```

<210> 106

<211> 241
 <212> PRT
 <213> Homo sapiens

<400> 106
 Met Lys His Leu Trp Phe Phe Leu Leu Leu Val Ala Leu Ala Ala Pro
 1 5 10 15
 Arg Trp Val Leu Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu
 20 25 30
 Val Lys Pro Ser Glu Thr Leu Ser Leu Thr Cys Thr V al Ser Gly Gly
 35 40 45
 Ser Ile Ser Arg Tyr Tyr Trp Ser Trp Ile Arg Gln Pro Pro Gly Lys
 50 55 60
 Gly Leu Glu Trp Ile Gly Tyr Val Ser Tyr Ser Gly Ser Thr Tyr Tyr
 65 70 75 80
 Asn Pro Ser Leu Lys Ser Arg Val Thr Ile Ser Val Ala Ser Pro Thr
 85 90 95
 Ser Lys Asn Gln Phe Ser Leu Lys Leu Ser Ser V al Thr Ala Ala Asp
 100 105 110
 Thr Ala Val Tyr Tyr Cys Ala Arg Asp Lys Leu Gly Ile Gly Asp Tyr
 115 120 125
 Trp Gly Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly
 130 135 140
 Pro Ser Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser
 145 150 155 160
 Thr Ala Ala Leu Gly Cys Leu Val Lys Asp T yr Phe Pro Glu Pro Val
 165 170 175
 Thr Val Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe
 180 185 190
 Pro Ala Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val
 195 200 205
 Thr Val Pro Ser Ser Asn Phe Gly Thr Gln Thr Tyr Thr Cys Asn Val
 210 215 220
 Ala Ser Pro His Lys Pro Ser Asn Thr L ys Val Ala Ser Pro Lys Thr
 225 230 235 240
 Val

<210> 107
 <211> 702
 <212> DNA
 <213> Homo sapiens

<400> 107
 atgaggctcc ctgctcagct cctggggctc ctgctgctct gggtcccagg tgccaggtgt 60
 gacatccaga tgaccagtc tc catcctcc ctgtctgcat ctgtaggaga cagagtcacc 120
 atcacttgcc gggcaagtca gggcattaga aatgatttag gctggtatca gcagaaaccg 180
 gggaaagccc ctaagcgct gatctatgct gcatccagtt tgcaaagtgg ggtcccatca 240
 aggttcagcg gcagtggatc tgggacagaa ttactctca caatcagcag cctgcagcct 300
 gaagattttg caacttatta ctgtctacag cataatagtt acccgtgcag ttttggccag 360
 gggaccaagc tggagatcaa acgaactgtg gctgcacat ctgtcttcat cttcccgcc 420
 tctgatgagc agttgaaatc tggaactgct agcgttgtgt gcctgctgaa taacttctat 480
 cccagagagg ccaaagtaca gtggaagggt gataacgccc tc caatcggg taactcccag 540
 gagagtgtca cagagcagga cagcaaggac agcacctaca gcctcagcag caccctgacg 600
 ctgagcaaag cagactacga gaaacacaaa gtctacgcct gcgaagtcac ccatcagggc 660
 ctgagctcgc ccgtcacaaa gagcttcaac aggggagagt gt 702

<210> 108

<211> 702
 <212> DNA
 <213> Homo sapiens

<400> 108
 acactctccc ctgttgaagc tctttgtgac gggcgagctc aggccctgat gggtgacttc 60
 gcaggcgtag actttgtgtt tctcgtagtc tgctttgctc agcgtcaggg tgctgctgag 120
 gctgtaggtg ctgtccttgc tgtcctgctc tgtgacactc tcctgggagt taccgattg 180
 gagggcggtta tccaccttcc actgtacttt ggcctctctg ggatagaagt tattcagcag 240
 gcacacaacg ctagcagttc cagatttcaa ctgctcatca gatggcgagg agatgaagac 300
 agatgggtgca gccacagttc gtttgatctc cagcttggtc ccctggccaa aactgcacgg 360
 gtaactatta tgctgtagac agtaataagt tgcaaaatct tcaggctgca ggctgctgat 420
 tgtgagagtg aattctgtcc cagatccact gccgctgaac cttgatggga cccactttg 480
 caaactggat gcagcataga tcaggcgctt aggggctttc cccggtttct gctgatacca 540
 gcctaaatca tttctaatagc cctgacttgc ccggcaagtg atggtgactc tgtctcctac 600
 agatgcagac agggaggatg gagactgg gt catctggatg tcacacctgg cacctgggaa 660
 ccagagcagc aggagcccca ggagctgagc agggagcctc at 702

<210> 109
 <211> 234
 <212> PRT
 <213> Homo sapiens

<400> 109
 Met Arg Leu Pro Ala Gln Leu Leu Gly Leu Leu Leu Trp Phe Pro
 1 5 10 15
 Gly Ala Arg Cys Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser
 20 25 30
 Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Arg Ala Ser Gln Gly
 35 40 45
 Ile Arg Asn Asp Leu Gly Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro
 50 55 60
 Lys Arg Leu Ile Tyr Ala Ser Ser Leu Gln Ser Gly Val Pro Ser
 65 70 75 80
 Arg Phe Ser Gly Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser
 85 90 95
 Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Leu Gln His Asn
 100 105 110
 Ser Tyr Pro Cys Ser Phe Gly Gln Gly Thr Lys Leu Glu Ile Lys Arg
 115 120 125
 Thr Val Ala Ala Pro Ser Val Phe Ile Phe Pro Pro Ser Asp Glu Gln
 130 135 140
 Leu Lys Ser Gly Thr Ala Ser Val Val Cys Leu Leu Asn Asn Phe Tyr
 145 150 155 160
 Pro Arg Glu Ala Lys Val Gln Trp Lys Val Asp Asn Ala Leu Gln Ser
 165 170 175
 Gly Asn Ser Gln Glu Ser Val Thr Glu Gln Asp Ser Lys Asp Ser Thr
 180 185 190
 Tyr Ser Leu Ser Ser Thr Leu Thr Leu Ser Lys Ala Asp Tyr Glu Lys
 195 200 205
 His Lys Val Tyr Ala Cys Glu Val Thr His Gln Gly Leu Ser Ser Pro
 210 215 220
 Val Thr Lys Ser Phe Asn Arg Gly Glu Cys
 225 230

<210> 110
 <211> 1996
 <212> DNA

<213> Homo sapiens

<400> 110

```

atgaagcatc tgtggttctt cctcctgctg gtggcagctc ccagatgggt cctgtcccag 60
gtgcagctgc aggagtcggg cccaggactg gtgaagcett tacagaccct gtccctcacc 120
tgcactgtct ctggtggctc catcagcagt ggtgtttact actggagctg gatccgccag 180
caccagggga agggcctgga gtggattggg tacatctata acagtaagac ctccattat 240
aatccgtccc tcaagagtcg acttacccta tcagtagaca cgtctaagaa ccagttctcc 300
ctgaacctga tctctgtgac tgccgcggac acggccgtgt attactgtgc gagagataaa 360
ttggggatcg cggactact g gggccaggga accctggtea cgtctcctc agcctccacc 420
aagggcccat cggctctccc cctggcgccc tgctctagaa gcacctccga gagcacagcc 480
gccctgggct gcctggtcaa ggactacttc cccgaaccgg tgacggtgtc gtggaactca 540
ggcgctctga ccagcggcgt gcacaccttc ccagctgtcc tacagtccctc aggactctac 600
tccctcagca gcgtggtgac cgtgcctcc agcaacttcg gcaccagac ctacacctgc 660
aacgtagatc aacagcccag caacaccaag gtggacaaga cagttggtga gaggccagct 720
cagggaggga ggggtgtctg tggaaagccag gctcagccct cctgcctgga cgcaccccg 780
ctgtgcagcc ccagcccagg gcagcaaggc agggcccat c tgtctcctca cccggaggcc 840
tctgcccgcc ccactcatgc tcagggagag ggtcttctgg ctttttccac caggctccag 900
gcaggcacag gctgggtgcc cctaccccag gcccttcaca cacaggggca ggtgcttggc 960
tcagacctgc caaaagccat atccgggagg accctgcccc tgacctaaagc cgaccccaa 1020
ggccaaactg tccact cctc cagctcggac acctctctc ctcccagatc cgagtaactc 1080
ccaatcttct tctgagag cgcaaatggt gtgtcgagt cccaccgtgc ccaggtaagc 1140
cagcccaggc ctgcacctcc agctcaaggc gggacagggt ccctagagta gcctgcatcc 1200
agggacaggc ccagctggg tgctgacacg tccacctcca tctcttctc agcac cacct 1260
gtggcaggac cgtcagctt cctcttcccc caaaaaccca aggacacct catgatctcc 1320
cggacccctg aggtcacgtg cgtggtggtg gacgtgagcc acgaagacc cgaggtccag 1380
ttcaactggc acgtggacgg cgtggagggt cataatgcca agacaaagcc acgggaggag 1440
cagttcaaca gcacgttccg tgtggtcagc gtccctaccg ttgtgcacca ggactggctg 1500
aacggcaagg agtacaagt caaggtctcc aacaaaggcc tcccagcccc catcgagaaa 1560
accatctcca aaaccaagg tgggacccgc ggggtatgag ggccacatgg acagaggccg 1620
gctcggccca cctctgccc tgggagtgac cgctgtgcca acctctgtcc ctacagggca 1680
gccccgagaa ccacaggtgt acacctgccc cccatcccgg gaggagatga ccaagaacca 1740
ggtcagcctg acctgcctgg tcaaaggctt ctaccccagc gacatcgccg tggagtggga 1800
gagcaatggg cagccggaga acaactacaa gaccacacct cccatgctgg actccgacgg 1860
ctccttcttc ctctacagca agctcacctg ggacaagagc agg tggcagc aggggaacgt 1920
cttctcatgc tccgtgatgc atgaggctct gcacaaccac tacacgcaga agagcctctc 1980
cctgtctccg ggtaaa 1996

```

<210> 111

<211> 1996

<212> DNA

<213> Homo sapiens

<400> 111

```

tttaccgga gacagggaga ggctct tctg cgtgtagtgg ttgtgcagag cctcatgcat 60
cacggagcat gagaagacgt tcccctgctg ccacctgctc ttgtccacgg tgagcttgct 120
gtagaggaag aaggagccgt cggagtccag catgggaggt gtggtcttgt agttgttctc 180
cggctgcccc ttgctctccc actccacggc gatgtcgctg gggtagaagc ctttgaccag 240
gcaggtcagg ctgacctggg tcttggtcat ctctcccg gatgggggca ggggtgtacac 300
ctgtggttct cggggctgcc ctgtaggagc agaggttggc acagcggtea ctcccagggc 360
agaggggtgg ccgagccggc ctctgtccat gtggccctca taccgcgcgg gtcccacct 420
tggtttttga gatggttttc tcgatggggg ctgggaggcc tttgttg gag acctgacct 480
tgtactcctt gccgttcagc cagtcctggt gcacaacggt gaggacgctg accacacgga 540
acgtgctgtt gaactgctcc tcccggtggc ttgtcttggc attatgcacc tccacgccgt 600
ccacgtacca gttgaactgg acctcggggt ctctcgtggc cacgtccacc accacgcacg 660
tgacctcagg ggtccgggag atcat gaggg tgctccttggg ttttgggggg aagaggaaga 720
ctgacgggtcc tgccacaggg ggtgctgagg aagagatgga ggtggacgtg tcagcaccca 780
gctggggcct gtccctggat gcaggctact ctagggcacc tgtccgcct tgagctggag 840
ggcgaggcct gggctggctt acctgggcac ggtgggcact cgacacaaca tttgcgtct 900

```

```

gcagagagaa gattgggagt tactcggatc tgggaggaga gaaggtgtcc gagctgaggg 960
agtggacagt ttggcctttg gggtcggctt aggtcagggg cagggtcctc ccggatatgg 1020
cttttggcag gtctgagcca agcacctgcc cctgtgtgtg aagggcctgg ggtaggggca 1080
cccagcctgt gcctgcctgg agcctggtgg aaaaagccag aag accctct ccctgagcat 1140
gagtggggcg ggcagaggcc tccgggtgag gagacagatg gggcctgcct tgctgccctg 1200
ggctggggct gcacagccgg ggtgcgtcca ggcaggaggg ctgagcctgg cttccagcag 1260
acaccctccc tccctgagct ggcctctcac caactgtctt gtccaccttg gtgttgctgg 1320
gcttgtgata tacgttgc ag gtgtaggtct gggtgccgaa gttgctggag ggcacgggtca 1380
ccacgctgct gagggagtag agtcctgagg actgtaggac agctgggaag gtgtgcacgc 1440
cgctggtcag agcgctgag ttccacgaca ccgtcaccgg ttcggggaag tagtccttga 1500
ccaggcagcc cagggcggtc gtgctctcgg aggtgcttct agagcagggc gccaggg gga 1560
agaccgatgg gcccttggtg gaggtgagg agacggtgac cagggttccc tggccccagt 1620
agtccgcgat ccccaattta tctctcgac agtaatacac ggccgtgtcc gcggcagtca 1680
cagagatcag gttcagggag aactggttct tagacgtgtc tactgatagg gtaagtcgac 1740
tcttgagggg cggattataa taggaggtct t actgttata gatgtaccca atccactcca 1800
ggcccttccc tgggtgctgg cggatccagc tccagtagta aacaccactg ctgatggagc 1860
caccagagac agtgcaggtg agggacaggg tctgtaaagg cttcaccagt cctggggccc 1920
actcctgcag ctgcacctgg gacaggaccc atctgggagc tgccaccagc aggaggaaga 1980
accacagatg cttcat 1996

```

<210> 112

<211> 235

<212> PRT

<213> homo sapiens

<400> 112

```

Met Lys His Leu Trp Phe Phe Leu Leu Leu Val Ala Ala Pro Arg Trp
 1           5           10           15
Val Leu Ser Gln Val Gln Leu Gln Glu Ser Gly Pro Gly Leu Val Lys
          20           25           30
Pro Leu Gln Thr Leu Ser Leu Thr Cys Thr Val Ser Gly Gly Ser Ile
          35           40           45
Ser Ser Gly Val Tyr Tyr Trp Ser Trp Ile Arg Gln His Pro Gly Lys
          50           55           60
Gly Leu Glu Trp Ile Gly Tyr Ile Tyr Asn Ser Lys Thr Ser Tyr Tyr
65           70           75           80
Asn Pro Ser Leu Lys Ser Arg Leu Thr Leu Ser Val Asp Thr Ser Lys
          85           90           95
Asn Gln Phe Ser Leu Asn Leu Ile Ser Val Thr Ala Ala Asp Thr Ala
          100          105          110
Val Tyr Tyr Cys Ala Arg Asp Lys Leu Gly Ile Ala Asp Tyr Trp Gly
          115          120          125
Gln Gly Thr Leu Val Thr Val Ser Ser Ala Ser Thr Lys Gly Pro Ser
          130          135          140
Val Phe Pro Leu Ala Pro Cys Ser Arg Ser Thr Ser Glu Ser Thr Ala
145          150          155          160
Ala Leu Gly Cys Leu Val Lys Asp Tyr Phe Pro Glu Pro Val Thr Val
          165          170          175
Ser Trp Asn Ser Gly Ala Leu Thr Ser Gly Val His Thr Phe Pro Ala
          180          185          190
Val Leu Gln Ser Ser Gly Leu Tyr Ser Leu Ser Ser Val Val Thr Val
          195          200          205
Pro Ser Ser Asn Phe Gly Thr Gln Thr Tyr Thr Cys Asn Val Asp His
          210          215          220
Lys Pro Ser Asn Thr Lys Val Asp Lys Thr Val
225          230          235

```

<210> 113

<211> 702
 <212> DNA
 <213> Homo sapiens

<400> 113
 atgaggggtcc ctgctcagct cctgggggctc ctgctgctct ggttcccagg tgccaggtgt 60
 gacatccaga tgaccagtc tccatcctcc ctgtctgcat ctgtaggaga cagagtcacc 120
 atcacttgcc ggacaagtca gggcattaga aatgatttag gctgggtatca gcagaaacca 180
 gggaaaagccc ctaagcgctt gatctatgct gcatccagtt tgcaaagtgg ggtcccatca 240
 aggttcagcg gcagtggatc tgggacagaa ttactctca caatcagcag cctgcagcct 300
 gaagattttg caacttatta ctgtctacag cataatagct accctcccac ttctggcgga 360
 gggaccaagg tggagatcaa acgaactgtg gctgcacat ctgtcttcat ctt cccgcca 420
 tctgatgagc agttgaaatc tggaaactgt agcgttgtgt gcctgctgaa taacttctat 480
 cccagagagg ccaaagtaca gtggaagggt gataacgccc tccaatcggg taactcccag 540
 gagagtgtca cagacagga cagcaaggac agcacctaca gcctcagcag caccctgacg 600
 ctgagcaaag cagactacga gaaacacaaa g tctacgcct gcgaagtcac ccatcagggc 660
 ctgagctcgc ccgtcacaaa gagcttcaac aggggagagt gt 702

<210> 114
 <211> 702
 <212> DNA
 <213> Homo sapiens

<400> 114
 acactctccc ctgttgaagc tctttgtgac gggcgagctc aggcctgat ggggtgacttc 60
 gcaggcgtag actttgtgt t tctcgtagtc tgctttgctc agcgtcaggg tgctgctgag 120
 gctgtaggtg ctgtccttgc tgtcctgctc tgtgacactc tctgggagt taccgattg 180
 gagggcggtta tccaccttcc actgtacttt ggcctctctg ggatagaagt tattcagcag 240
 gcacacaacg ctagcagttc cagatttcaa ctgctcatca gatggcgagg agatgaagac 300
 agatgggtgca gccacagttc gtttgatctc caccttggtc cctccgccga aagtgggagg 360
 gtagctatta tgctgtagac agtaataagt tgcaaaatct tcaggctgca ggctgctgat 420
 tgtgagagtg aattctgtcc cagatccact gccgctgaac cttgatggga cccactttg 480
 caaatggat gcagcataga tcaggcgctt aggggcttt c cctggtttct gctgatacca 540
 gcctaataca tttctaagc cctgacttgt ccggcaagtg atggtgactc tgtctcctac 600
 agatgcagac agggaggatg gagactgggt catctggatg tcacacctgg cacctgggaa 660
 ccagagcagc aggagcccca ggagctgagc agggaccctc at 702

<210> 115
 <211> 234
 <212> PRT
 <213> Homo sapiens

<400> 115
 Met Arg Val Pro Ala Gln Leu Leu Gly Leu Leu Leu Trp Phe Pro
 1 5 10 15
 Gly Ala Arg Cys Asp Ile Gln Met Thr Gln Ser Pro Ser Ser Leu Ser
 20 25 30
 Ala Ser Val Gly Asp Arg Val Thr Ile Thr Cys Arg Thr Ser Gln Gly
 35 40 45
 Ile Arg Asn Asp Leu Gly Trp Tyr Gln Gln Lys Pro Gly Lys Ala Pro
 50 55 60
 Lys Arg Leu Ile Tyr Ala Ala Ser Ser Leu Gln Ser Gly Val Pro Ser
 65 70 75 80
 Arg Phe Ser Gly Ser Gly Ser Gly Thr Glu Phe Thr Leu Thr Ile Ser
 85 90 95
 Ser Leu Gln Pro Glu Asp Phe Ala Thr Tyr Tyr Cys Leu Gln His Asn
 100 105 110
 Ser Tyr Pro Pro Thr Phe Gly Gly Thr Lys Val Glu Ile Lys Arg
 115 120 125

Thr	Val	Ala	Ala	Pro	Ser	Val	Phe	Ile	Phe	Pro	Pro	Ser	Asp	Glu	Gln	
						130					135					140
Leu	Lys	Ser	Gly	Thr	Ala	Ser	Val	Val	Cys	Leu	Leu	Asn	Asn	Phe	Tyr	
						145					150					155
Pro	Arg	Glu	Ala	Lys	Val	Gln	Trp	Lys	Val	Asp	Asn	Ala	Leu	Gln	Ser	
						165					170					175
Gly	Asn	Ser	Gln	Glu	Ser	Val	Thr	Glu	Gln	Asp	Ser	Lys	Asp	Ser	Thr	
						180					185					190
Tyr	Ser	Leu	Ser	Ser	Thr	Leu	Thr	Leu	Ser	Lys	Ala	Asp	Tyr	Glu	Lys	
						195					200					205
His	Lys	Val	Tyr	Ala	Cys	Glu	Val	Thr	His	Gln	Gly	Leu	Ser	Ser	Pro	
						210					215					220
Val	Thr	Lys	Ser	Phe	Asn	Arg	Gly	Glu	Cys							
						225					230					